AMERICAN GAS JOURNAL

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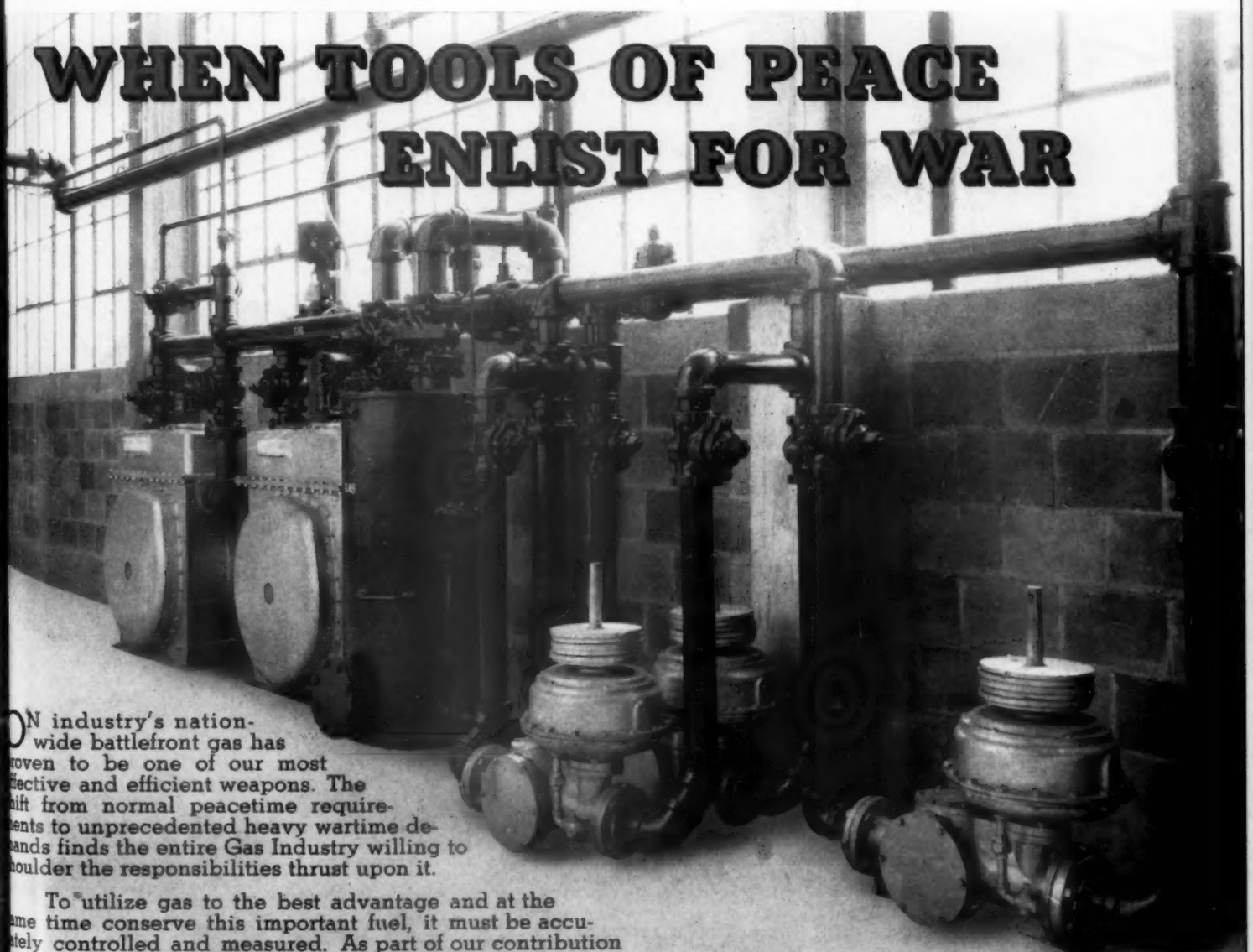

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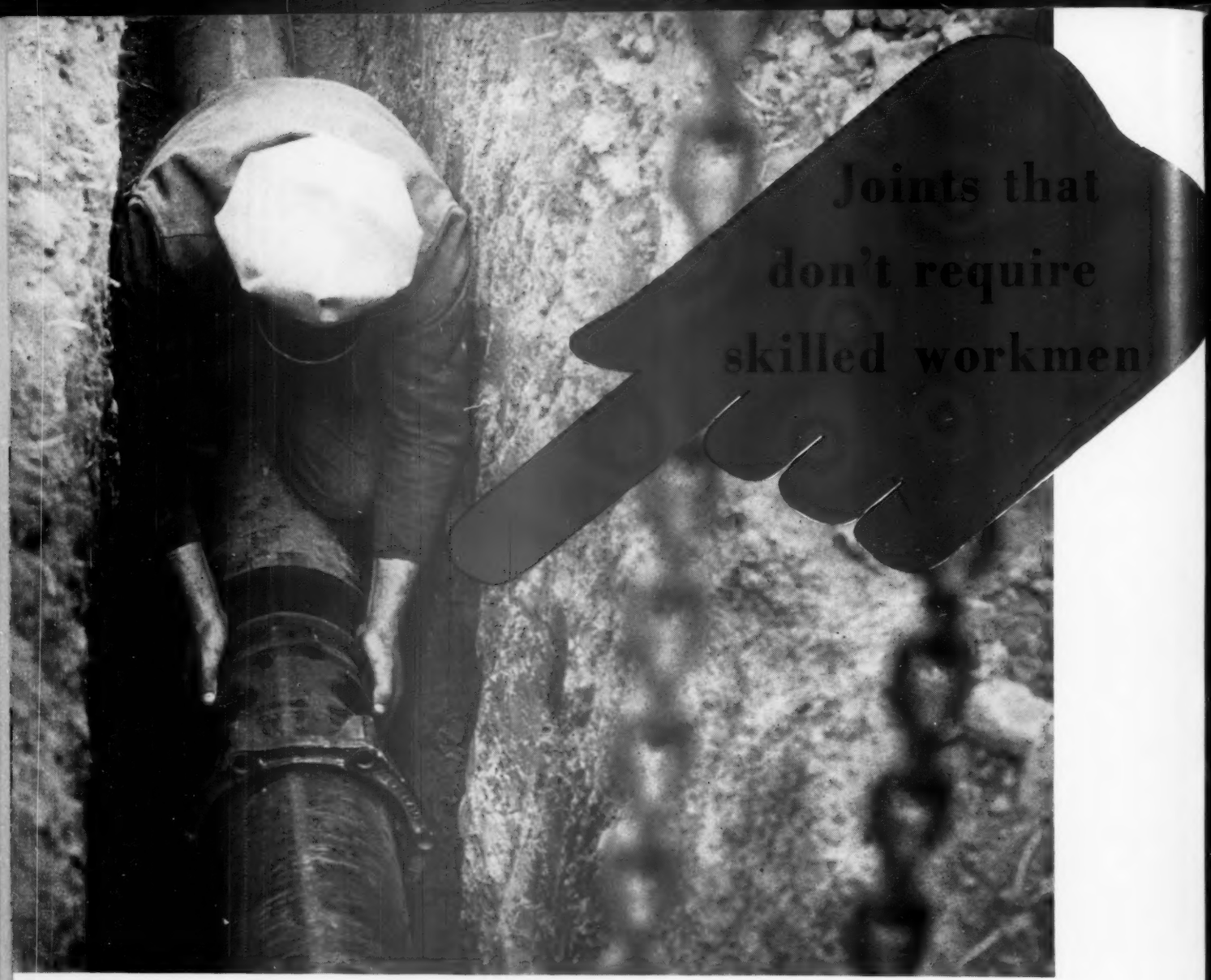

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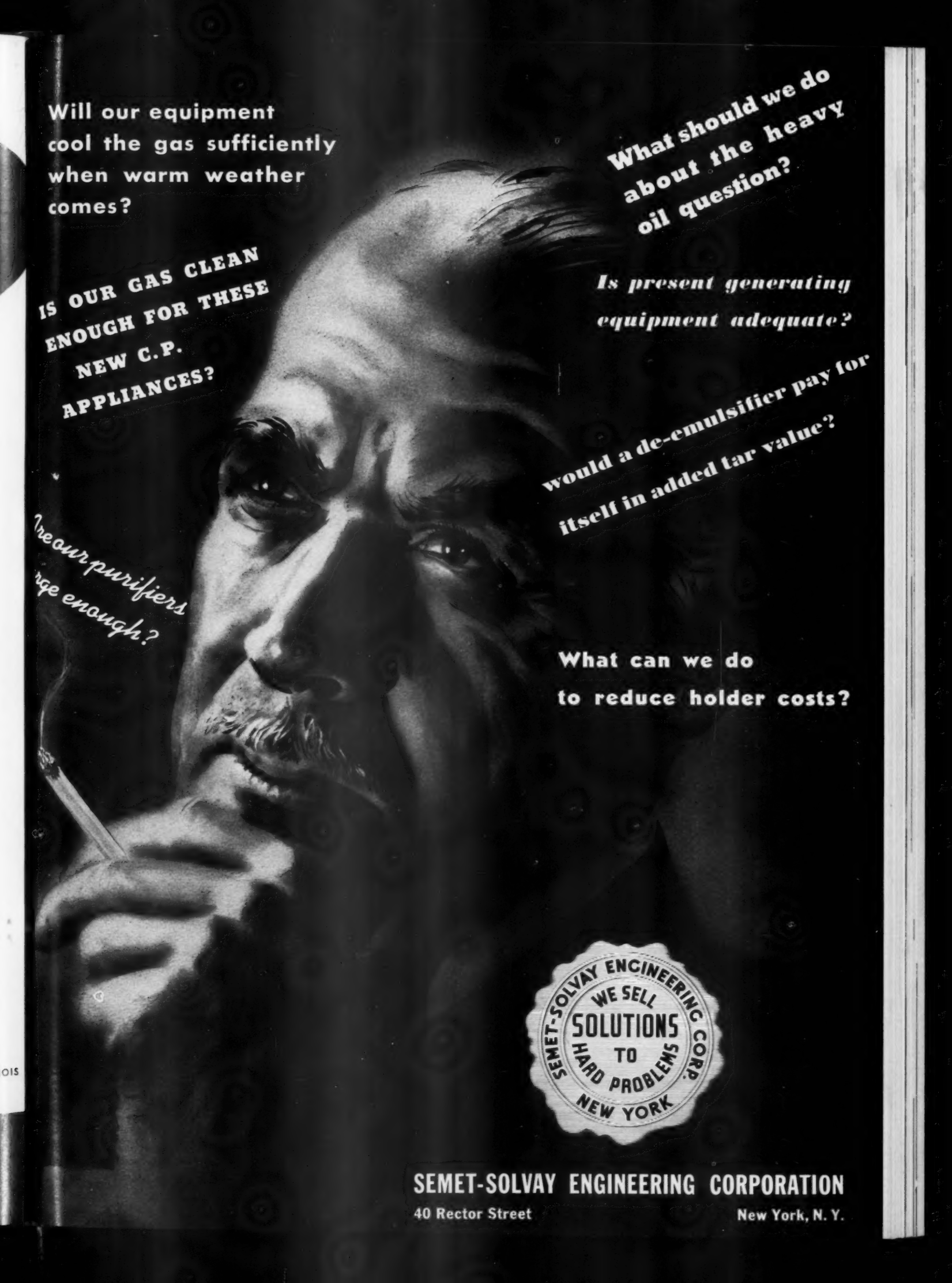
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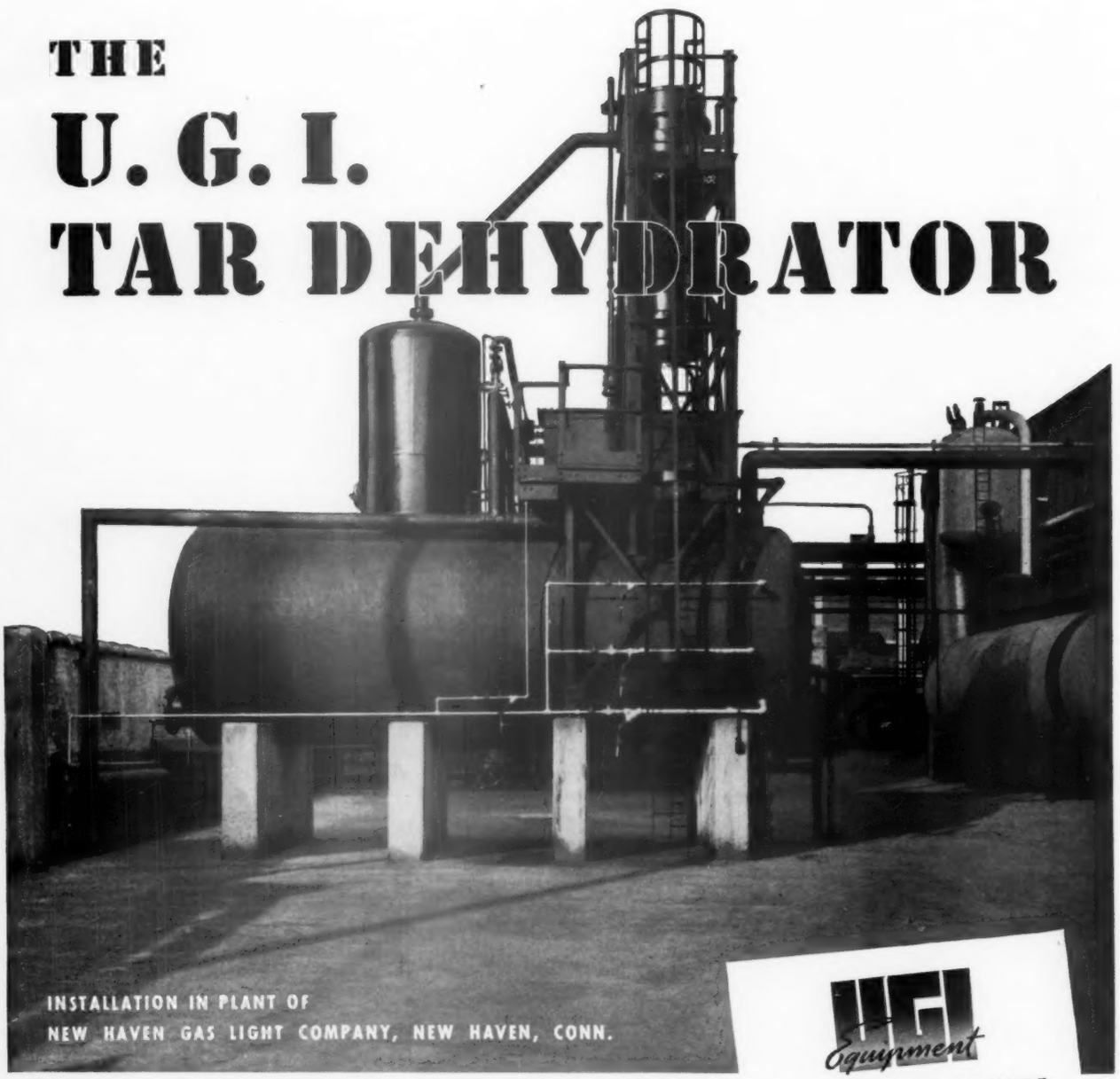

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GAS JOURNAL

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The New England Gas Industry And The War

By

Charles G. Young

Retiring President, New England Gas Assn.
Manager Springfield Gas Light Co.

WHEN our country was plunged into this world-wide raging conflict last December, we were brought face to face with conditions that every one of us had hoped might never be thrust upon us. Just a year ago at our Annual Meeting the subject of one of the speakers was: "Nothing is Certain Except Change." The incredible has happened, and is happening every day, and I doubt that even a few of those present that day could have foreseen that world conditions, bad as they were then, would be in this present chaotic state.

It cannot be too often repeated that modern war is total war—and war in the 1942 tempo is a deadly serious business. All businesses, ours included, must meet these ever changing conditions, which occur with such lightning-like rapidity, with every ounce of vigor we possess, in order that a successful ending is assured. "Business as usual" is out for the duration, and with it go many of our plans, hopes and activities.

As we gather together for the Sixteenth Annual Business Conference, there can be no reason for any attitude other than a determined facing of these facts. The thought uppermost in the minds of every person here, is that our first concern is with the war effort and, secondly, the question of how best this effort can be served by each and every one of us. Under these conditions it seems timely to review briefly the position of The New England Gas Association and its activities as we go to war.

Before considering some of these activities, I should like to call your attention to the statement of The New England Gas Association objectives, as noted on the inside back page of the January, 1942 issue of the "Gas News," and particularly to the fourth article, which reads as follows: "To promote the development of the gas industry generally to the end of increasing its public usefulness." All of the objectives of the Association are important, but it seems to me that this particular one should be continually borne in mind by all of our members during these trying times. If ever there was an opportunity to demonstrate its public usefulness, it is before The New England Gas Association today. We shall meet this opportunity!

Gas Industry is Essential in the War Effort

By comparison with many industries not directly engaged in the national war effort, we can consider ourselves extremely fortunate. Not

1942-43 OFFICERS OF THE NEW ENGLAND GAS ASSOCIATION

FRONT ROW, left to right—John West (president elect), president Worcester County Elec. Co.; Charles G. Young (president), manager, Springfield Gas Light Co.

BACK ROW, left to right—Hall M. Henry (2nd vice president elect), Negea Service Corp., Cambridge; Earl H. Eacker (treasurer), assistant to president, Boston Consolidated Gas Co.; Clark Belden, executive secretary and clerk, The New England Gas Assn., Boston.

only is our fuel of vital importance to war industries, but, it is equally important to the civilian population that is responsible for the output of these war industries. Hand in hand with this fortunate, but responsible, position, however, we have a definite obligation—to make sure that our service to those dependent on us shall not fail. This challenge immediately presents certain problems and complications which must be solved. Restrictions have been placed on all kinds of materials and basic raw fuel supplies are uncertain because of transportation. The demands of war industry have brought many of our plants to near capacity. Also, inroads are being made on personnel for war activities of one kind or another. These are but a few of the many *new* problems we are facing, which, together with those normally encountered, are bound to test every man in our industry, regardless of his position.

Insofar as the Association is concerned, answers to some of these perplexing questions can be secured through division discussion, or the presentation of papers dealing with subjects of major importance. In many cases, however, the need for prompt action will require the setting up of special committees, or, the calling together of specific groups in order to get the greatest benefit quickly to Association members. To some extent these problems have already been recognized and discussed within the Association, but I often wonder if the fullest use is made of the pertinent information which is available. In these days, when there is so much to occupy our time, it is very easy to pass over the various trade papers—and *even* our own New England Gas News—which reports the various division activities. This was brought home to me a few days ago, when discussing a certain industry problem with a member of the Association. In answer to his question, I remembered having read something related to the matter in one of the issues of the Gas News and was able to find the copy and supply the answer. In the event that you have missed any of these papers, a brief review of them may help you find a solution for some pressing problem.

Gas Companies Have Prepared for Air Raids

The subject of Civilian Defense, as it pertains to our industry, has received considerable prominence in Association conferences during the year, and through discussion many items of a controversial nature have been cleared. A year ago, the prospect of bombing or the invasion of New England was considered remote. Today, this does not seem improbable, but entirely possible. From the discussions at divisional and other meetings, it appears that most of our companies are fully aware of the damaging effects of air raids and have made preparations to handle the various emergencies which might occur. Inasmuch as this particular subject is one of paramount importance, it should be reviewed frequently, in order that all companies may have the benefit of new information, or plans, as they are developed. In the meantime, the Association is collecting and digesting a large volume of material accumulated from various sources and throughout the year has sent out to member companies such information, or releases, as seemed important and timely.

While there has been little indication of anyone "getting the jitters" or becoming hysterical over present day affairs, I do believe that there is a distinction between deliberate, considered action and complacency. There are many things to be done and we must not be complacent about them. Our ways of living are very definitely going to be changed and the lives of every one of us are going to be affected by this war.

We have a duty, to repeat again and again, to our employees, fellow citizens and any one else we contact—that we must be prepared to make sacrifices—that we must be energetic about our preparations for local and company defense—that we must contribute our share to the cost of the war—and that we must participate to the fullest possible extent in our local community activities.

When I realize the enormous responsibilities taken on by men like Norm Bertolette, Bud Rutherford, John Weiser, and others in their respective communities, all in addition to their own company duties, it is a further indication that the men of today in the New England gas industry are carrying on in the same thorough manner, as those men who so ably guided the industry through troublesome times in years gone by.

The stupendous cost of this war, with billions of dollars being spent on planes, ships, tanks, guns and other materials, must be paid for, sooner or later. For this reason, I strongly urge all of our member companies to make available to their employees the Payroll Allotment Plan for the purchase of United States Defense Savings Bonds. The installation of this Plan is an opportunity for a company to do a patriotic duty; and it will build morale within its organization.

I believe that we, as individuals, as well as the industry, are willing to make whatever sacrifice necessary to preserve the American way of life. It should be the aim of our Association to contribute to our Nation's war effort in every way possible, meanwhile continuing our program of assistance and co-operation, so that every effort can be made by us to maintain our various functions in a manner consistent with the Nation's current policies.

Gas Companies Have Not Profited Financially by War Activity

A review of the financial statements of industrial concerns reporting for the year 1941 indicates that, in most instances, in spite of higher taxes, there was a substantial increase in net earnings. At the moment, complete figures are not available for the gas companies, but I rather imagine that, except for those companies which received rate increases during the year, the statements will show a decline, despite an over-all increase in gross dollar volume. In these cases it would certainly be well to review, as far as possible, the effect of increased expenses for the coming year, to the end that rate increases, wherever necessary, are petitioned. Taxes, in many cases already in excess of net income, promise to reach an all-time high this year, which, together with increased fuel and labor costs, may entirely eliminate all profit and jeopardize company service and credit. Along with our contribution to the war effort, I believe it is highly important that service and credit be maintained. We are prepared to sacrifice profits, *but*, if the burden becomes too great, and it is necessary to petition for rate increases, may such steps be taken with the clear conscience that every method at our disposal has been used to avoid such action.

Sales Promotion Policies

Due to the extreme urgency of the war demands, the policies governing sales promotion are rapidly changing. Plans made at the first of the year have been completely changed, and what the future holds is problematical. Limitations have already been placed on the sales of refrigerators, and indications point to a rapid decrease in other available mer-

chandise. This situation presents a serious problem for sales departments and for management, and it is my opinion that it is important that we endeavor to retain in company organizations those valuable men who have contributed so much to the success of our sales efforts in the past, and who will form the nucleus of the sales force once this emergency is over. Sales executives might well be used to develop a plan for post war operations, to the end that aggressive sales activities may be resumed as rapidly as possible at the conclusion of the war.

In connection with this post war activity, it is significant to note the apprehension, as expressed in an article appearing in the February, 1942, issue of the magazine, "GAS," regarding the activities of the Association of Gas Appliance and Equipment Manufacturers. In this article, it is pointed out that the National Electrical Manufacturers' Association is presenting to its members for 1942, a budget that is nearly 25% in excess of its substantial 1941 costs of operation. This indicates quite clearly that our competitors are preparing to maintain and improve their position. We, too, must not stand still, but must be prepared, from every possible angle, to hold and better *our* present position, and we should impress upon the Gas Appliance and Equipment Manufacturers' Association the vital importance of carrying on the activities which they have performed so capably in the past.

Home Service Activities

Our Home Service Group has already assumed an important part in the national program of "Nutrition for Defense." Past wars have proved the importance of the health of our population, for it determines the success of our industries, the strength of our citizens and the stability of our community. The living habits of our people are changing and it is fully expected that more and more cooking will be done in the home. This condition should be recognized; and upon the home service departments rests a large share of the responsibility to see that our customers utilize our fuel to its best advantage.

Appliance Servicing

For many years the gas companies have built up a reputation for prompt and efficient servicing of the appliances on their mains. Now that our government has asked us to conserve tires, gasoline and other vital supplies, we will be sorely put to maintain this reputation. It is most timely that our Association, after 2½ years of research, can offer one solution to this problem. I refer to the Gas Appliance Servicing Manual, which is now available and offers an organized plan of instruction for training service men to do their work more quickly and more efficiently. This improved production per service man will help offset the labor shortage problem of experienced service men. Appliances will have to be correctly serviced on the first call, as we won't be able to afford the time, or expense, of repeated calls.

Priorities and Allocations

Within the year the government has set up the War Production Board, whose duties cover the issuing of priorities and the allocation of strategic materials in raw and finished forms to all industry. This program is quite involved and requires a tremendous amount of statistical work to obtain the necessary information and required reports for control of purchases. Relief in the form of special permits to procure essential materials has been afforded and, so far as I am able to determine, is working no unreasonable hardship on any of our companies.

The limits covering purchases are well defined and fairly liberal, but it is the duty of those charged with the requisitioning of materials to analyze their needs so that purchases are held to an absolute minimum, even though this minimum is below that allowed by law clipping. Various phases of these requirements have been discussed by the Association divisions and, as changes occur, should receive further consideration and study.

Waste and salvage are subjects which assume major importance during the war period. Programs covering this work have been set up in many companies, but there still remains an apparent need for immediate action. If this operation has not been covered by your company, I strongly urge that steps be taken to follow it up immediately.

Material Shortages and Operating Problems

Over the years, the manufacture and distribution of gas has been subject to many changes, all of which have been made after thorough research and testing. From present indications, *new problems* are very likely to be added, due to the fact that fuels and other materials, to which we have been accustomed, may not be available. This will test the ingenuity and resourcefulness of those charged with the operation of our plant and distribution departments, and the Association, through its divisional meetings, should be most helpful in solving problems brought about by these new conditions.

The problem of transportation is bound to have its effect on our raw fuel supplies and is likely to become most severe by next fall and winter. We may have to accept substitute fuels, but it is important that we do receive the things vital to our industry. Within the past month a meeting was held in Boston of those interested primarily in oil supplies. After considerable discussion, it was decided that an informal committee should be set up to handle the presentation of the gas companies' fuel needs to such authorities as would be most helpful. This committee has been formed, under the chairmanship of Hall M. Henry, questionnaires have been sent out and, to date, considerable progress is reported.

Throughout the entire program of company operations, there is a pronounced need of economies of all types and kinds. The government has warned that tires and automobiles will be at a premium shortly and already many companies have inaugurated steps which call for a decrease in automobile use of 25% to 50%. This, of course, means some curtailment of service of one kind or another, but in my opinion, it is a definite recognition of the urgency of the situation. As we progress further into the War, economies of materials and labor are inevitably going to become more and more necessary. For this reason, I would recommend that future division meetings devote at least a part of their sessions to a consideration of this subject, to the end that information regarding possible economies may be freely exchanged.

In completing my term as president of the Association, I am impressed, as so many presidents before me have

(Concluded on page 42)

War Emergency Activities of the Southern California Gas Co.

By
Fred A. Herr
Los Angeles, California

PREPARATIONS for meeting emergencies occasioned by enemy air assaults on the Los Angeles area —in which most of the company's properties are located—were placed in effect by the Southern California Gas Co. immediately after the outbreak of war on December 8.

For the purpose of coordinating activities brought upon by the war, the company superimposed upon its normal organization a new one called a War Emergency Coordinating Agency. This group, consisting of executives and supervisors, acts in a general staff capacity. Under its direction the employees of the company have been organized and training in war emergency activities has been underway since the outbreak of the war.

The company's preparations have two-fold objectives:

1. Safety of employees on duty during an attack.
2. Safety of plant and public after an attack and return of damaged property to operating condition with minimum delay.

Use Volunteers Only

The plan provides for use of company personnel whenever possible in the execution of emergency tasks to which the men and women are best fitted by experience or for which they are most readily available. Employees accepting war emergency assignments do so on a voluntary basis.

The War Emergency Coordinating Group is divided into eight subgroups, each headed by a director, or chairman. The groups are responsible for handling various special emergency tasks which may arise as the result of an aerial attack or sabotage.

The eight major activities concentrated under the general supervision of the War Emergency Coordinating Organization are as follows:

1 . . . General coordination of all company-sponsored defense activities —Chairman, Guy W. Wadsworth, Jr., vice-president; Vice-chairman, R. R. Blackburn, general agent; general supervisor, S. W. Binckley, assistant to the controller.

2 . . . Emergency operations in the field during blackouts and after bombings; control of gas fires, repair of gas mains and reestablishment of service after emergencies: Chairman, Elting Henderson, general superintendent of Street Department; assisted by C. A. Renz, general superintendent of Customer Service Department.

3 . . . Control and distribution of emergency defense assignment identification cards, special passes, direction of defense assignments, and shift changes and office hours to meet emergencies: Chairman W. R. Davis, personnel manager.

4 . . . Mobilization of vehicles and procurement of special permits for their operation during blackouts: Chairman, B. M. Laulhere, technical supervisor.

5 . . . Anti-sabotage precautions at company property, blackout installations, direction of employee safety measures during blackouts and air raids, supervision of air raid, fire and floor wardens, first aid training: Chairman, E. E. Ellis, safety supervisor.

6 . . . Contact with Army, Navy and Civilian Defense Commands and press relations: Chairman, O. C. Mauthe special representative.

7 . . . Customer relations, dissemination of information to customers, assignment of use of company auditorium, offices and plants to civilian defense commands: Chairman, H. E. Davidson, general superintendent, customers department.

8 . . . Oil field protection and coordination and cooperation of gas company oil field defense efforts with the oil industry: Chairman, H. P. George, general superintendent of natural gas production.

Information on Damage

The Southern California Gas Co.'s War Emergency Coordinating group has a close tie-up with the Civilian Defense organization which in Los Angeles County is handled largely through the offices of Sheriff Eugene Biscailuz. The sheriff's organization, in turn, has direct contacts with various municipalities in the county so that reports of damage done in any one town will flow into the sheriff's office and the headquarters of Civilian Defense.

The gas company has made arrangements for receiving information through the above sources concerning the approximate amount of damage done to company property in the various areas of the county and what steps will be necessary to make repairs. Advance notice of impending blackouts is also received. Similar arrangements have been made in other counties served by the company.

This arrangement for receipt of authentic information has three advantages, according to S. W. Binckley, general supervisor of the company's cordinating group:

It makes it possible for gas company blackout crews to get to their stations *before* the lights go out; it enables the emergency field operations supervisor to notify local emergency crews of the location and extent of damage from air raids so that they may rush to the scene with a minimum of delay; and it gives the heads of operating departments an over-all picture of the various areas in which damage has been inflicted so that they may dispatch reserve crews and equipment to the best advantage.

Trained Emergency Crews

The emergency field work has been set up on a basis of small districts and trained emergency crews. The setup includes emergency base locations for Distribution Department activities as well as regular operating bases. The base stations, which are scattered throughout the area served, have emergency repair equipment, fire extinguishers, trucks and other supplies for handling emergency work in the district. The stations also have sleeping quarters and cooking facilities for use by men on duty for extended periods.

As soon as notice of a general "alert" is flashed to the central agency at the gas company's headquarters in

Los Angeles, these crews are dispatched to the emergency base locations. The crews are expected to perform emergency repairs or operations during the blackout and will be supplemented when the "all clear" signal is received. If districts have to be isolated or shut off, the blackout crews will operate the appropriate valves. The company's plan is to have these crews on duty *before* the actual blackout begins. In the event no advance notice of a blackout is given, the blackout or "alert" crews are expected to get to their base locations without orders from central headquarters as soon as the blackout sirens sound.

Post Air Raid Crews

The setup also includes post air raid crews. The plans call for post air raid crews to report to their base locations without further orders *immediately after any actual air raid.* These crews again are considerably larger than the foregoing ones. They will go into action as soon as the "All clear" signal has sounded. Upon the members of the post air raid crews will fall the duty of completing emergency repairs to company property damaged during the raid. This will include shutting off gas at customers' meters, repairing broken mains, extinguishing gas fires, etc.

Company personnel not included in the blackout or post air raid crews will remain at their homes after the all clear signal is given and will report for duty at the normal time unless they are instructed by telephone or messenger to report sooner. Such employees constitute the reserve force of the company and will be used to man reserve equipment, operate telephones, and, if necessary, to assist in restoration of service.

Isolation of Damaged Areas

The gas company's entire system has been divided into a number of so-called isolation districts. The emergency personnel has been trained to act upon its own initiative in the event that disorganization of the telephone system makes the dispatch of orders from the central agency impossible. In such cases, the supervisors of the various isolation districts are expected to assume the responsibility for making decision concerning emergency repairs, and whether the gas supply of the district should be shut off to avoid loss of gas or loss of pressure.

Test Under Jap Attack

The blackout emergency crews went on duty on the night of February 24, when the war was brought to the front door of Los Angeles for the first time since December 7. On that night anti-aircraft batteries went into action against enemy planes reported flying over the southwestern section of Los Angeles, the harbor district and Long Beach, an area in which are located some of the largest oil fields and airplane plants of Southern California. Presumably, because of the presence of a Japanese submarine in the waters off Santa Barbara, a three-hour alert was ordered in Los Angeles at dusk on the night of February 24. This "alert" brought the Southern California Gas Company's crews to their posts.

The evening alert ended at 10:23 p.m., but at 2:24 a.m. another was ordered by the Fourth Interceptor Command and within three minutes Los Angeles County was blacked out from Santa Monica on the ocean front to Pomona, 40 miles inland.

That blackout gave the gas company's blackout emergency crews an opportunity to test their organization under the actual war-time conditions for which they had been trained. Within seconds after the second alert had been ordered, members of the company's blackout crews were rushing to their stations. They remained on duty from 2:24 a.m. until 7:30 a.m. on February 25, at which time the all clear signal was received.

Driven off by anti-aircraft batteries, the enemy planes dropped no bombs. There was no damage to company property, but throughout the night the gas company's post air raid crews stood by for instant action to take over should the occasion arise. They got no action on that night, but they proved their readiness for action, if and when enemy planes again roar over the city. Bombs may drop the next time; if so, the emergency crews of the Southern California Gas Co. are ready.

Defense Assignment Cards

The value of the Emergency Defense Assignment Card which is carried by every member of the gas company's war-time emergency service was also demonstrated during the February blackout. With traffic "frozen" throughout the duration of the blackout, the assignment cards, together with employee identification cards, enabled members of the gas company's crews to reach their posts quickly without being held up unduly for identification by Army and Civilian Defense guards.

The emergency defense assignment cards are buff colored and approximately the size of a lodge card. They contain the emergency worker's name, identification number, the duties to which he is assigned and location to which he is to report. The cards contain the following information for police, fire department and Army guards:

> "This employee's services are essential in an emergency. Please pass through police and fire lines."

Signatures of the gas company's supervisor and personnel manager and the date on which the employee's emergency assignment expires appear at the bottom of the card.

Anti-Sabotage Precautions

The air raid and blackout preparation program is only one phase of a comprehensive war defense plan which has been formulated by the Southern California Gas Co. Other phases of the program concern anti-sabotage precautions, employee welfare protection, employee evacuation during air raids, fire protection and Red Cross and first aid training.

The company has considerably increased precautions to prevent damage to gas holders, stations and other property. Armed guards have been posted at vital points. All plant personnel has been urged to cooperate in excluding unauthorized persons from plants, where serious damage might be done by saboteurs. Additional fencing, lighting, screening and sandbagging has been, or will be installed where such protection is regarded as necessary and practical.

Detailed plans have been prepared and written instructions have been issued for the evacuation of all employees at all company locations during air raids. Surveys were made to determine evacuation and protection requirements. Based on the results of these surveys, plans were formulated for the removal of all employees from points of danger. This pertains to the main office building and its annex on South Flower St. in downtown Los Angeles as well as to all branch plants, division offices, warehouses and storage plants.

Employee Evacuation

To prevent over-crowding of elevators and the hysteria that might result therefrom, no elevators will be used for evacuation purposes. Employees will pass down stairways from the upper floors. A floor warden has been assigned to each floor of the buildings to direct employee evacuation. The wardens are volunteers from the regular staff who will as-

sume their duties as wardens only during air raids. Their duties are to supervise the orderly movements of personnel from the upper floors to intermediate floors of the buildings, to insure proper distribution of evacuees and to make themselves useful in other ways that will expedite a calm and orderly execution of this phase of the company's general program.

Signs of the times in the gas company's 11-story main office building and the six-story annex at 810-822 South Flower St., Los Angeles, are large cardboard posters on the walls of hallways. One type of sign reads:

IN CASE OF AIR RAID
GO TO
BASEMENT OLD BUILDING
USE STAIRS

Another sign reads:

IN CASE OF AIR RAID
GO TO NEW AUDITORIUM
USE STAIRS

The company has done considerable research on the subject of extinguishing fires in broken gas mains. Modern equipment, supplemented by special tools, have been acquired for this type of emergency work. Considerable amounts of additional fire fighting equipment also have been distributed to various locations. Every employee detailed to fire protection work has been issued written instructions concerning his duties in case of air raid or fire. Fire protection crews have been enlisted for service at the main office buildings as well as at all branch and division offices, production plants, storage depots and warehouses.

First Aid Crews

First aid crews have been organized throughout the gas company's extensive organization. Some of the employees who have volunteered for first aid service are Red Cross graduates. Many other employees are given Red Cross training under instructors directed by the company's safety supervisor, E. E. Ellis, to prepare them to give first aid to persons injured during air raids.

In studying the comprehensive program which the Southern California Gas Co. has formulated for coordinating its many war emergency activities, it becomes apparent that the plans are not merely "on paper." It is evident that an active, effective "working" organization is on the job, prepared to carry out a program which has been prepared in minute detail after considerable study to meet contingencies which the war might produce.

Vegetable Dehydrating Plants Big Users of Gas

By
Allen R. Carter

A new industry is rapidly taking form in California, one utilizing a large volume of gas. As the war continues and the need for export of foodstuffs for both fighting forces and civilians grows it is expected that this industry will expand wherever commercial vegetable crops are grown in the nation.

The industry is the dehydration of vegetables. More than two hundred tons of fresh garden vegetables are now being dehydrated every day in California, according to the Pacific Gas & Electric Company, which has played a role in developing the industry.

There are at this writing six firms engaged in the industry. These are: Barker Food Products Company, Turlock, Calif.; California Vegetable Concentrates Company, Gilroy; Basic Vegetables Products Corporation, Vacaville, Dry-Pack Corporation, San Jose; Fred K. Knipschild, Yuba City; G. B. Gentry Company, Gilroy.

The first-named firm alone uses "enough fuel to supply 2400 average homes" *when in full blast*, according to a computation made by the Pacific Gas & Electric Company. This gives some idea of the potential expansion of the new industry.

The firm went into business last November. In the first two months of operation it processed about four million pounds of cabbage and one million five hundred thousand pounds of onions. At this writing it dehydrates one hundred thirty thousand pounds of vegetables every day, including cabbages, onions, carrots, potatoes, and celery.

Barker Food Products utilizes ten drying tunnels, 54 feet long by 7 feet wide by 7 feet high, gas-fired and thermostatically controlled. Research on the question of dehydration has been conducted under the leadership of Dr. W. V. Cruess, of the Agricultural Experiment Station, University of California. The research has been going on for over twenty-five years, although little or no commercial application has been made since the first World War when large amounts of foodstuffs were dehydrated for the Army.

The research indicates the adaptability of gas for the dehydration process, as Dr. Cruess says: "Gas is very efficient and 100% of the heat is applied to the drying without any losses. It is clean and burns without odor. It is convenient — available whenever desired and can be shut off the moment it is no longer needed."

The question of retention of food values is one that has perhaps kept dehydration from making the strides one would expect; except in few instances there was no development of the industry after the last war.

New research, however, has developed proper dehydration so that Dr. Cruess is able to declare that vegetables retain their flavor and color as well as their minerals and most of their vitamin - value, when properly processed.

Most of the commercial produce can be properly dehydrated; in addition to the vegetables listed above carrots, tomatoes, green beans, beets, spinach, parsley, sweet potatoes, and garlic are being handled in some quantity. The processing consists of first slicing, shredding, cubing or powdering the vegetable (depending on type) and then removing the water under intense heat. Vegetables are then packed in tin containers holding around five pounds each.

It requires between six to twenty pounds of fresh vegetables, depending on type, to produce one pound of dehydrated—indicating amount of weight and packing space saved by the method. That is why the process is going to play an increasingly important part in winning the war. The American Army is now using a considerable quantity with virtually all the remaining pack being sent to the Allied Nations under Lease-Lend arrangements.

Victory must be planned—ahead!

— And not alone on the battlefields. Foresightedness is just as essential here on the industrial front — to maintain the ever-swelling crescendo of production that means victory for our country.

That naturally includes the essential Gas Industry. In checking every phase, don't overlook your purifying equipment. Is it giving you maximum efficiency? If it isn't, call us at Connelly at once. Connelly engineers, who have been serving the Gas Industry for 66 years, will gladly analyze your purifying requirements and submit unbiased recommendations.

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CHICAGO, ILL. ELIZABETH, N. J.

Gas Company Operation During War

By
Alfred I. Phillips
Editorial Director, American Gas Journal
Consulting Engineer

GAS COMPANY OPERATION during war—all of us look forward to it with apprehension. Yet not one of us doubts for a moment that the Gas Industry will live up fully to its past record and traditions. No more could be asked.

Gas company operation today, and in the days which lie ahead, must contemplate one thing above all else, and that thing is change. Change is the outstanding characteristic of the times. We must look forward to vast unpredictable changes in almost every branch of our business. Changes will come, in fact are coming nearly every day, so rapidly and unexpectedly that we find them accomplished facts almost before we believe them possible. A scant four months ago, few of us would have treated seriously a report that we should be unable to purchase tires for the automobiles we consider a business necessity, or that we may see an upswing in home cooking because of a shortage of tin for cans, or that we should be prohibited from buying, or even renting a typewriter.

One by one past economic and operating standards are falling into the discard. We find ourselves bewildered, and perhaps inclined to question whether those in authority appreciate fully our peculiar needs. Even so, few of us realize the extent of the changes that have already taken place; and only a prophet could foretell what the next few years will bring.

In casting about for some fundamental principle to guide us in our operations during these uncertain times, I can find none better than the following. That industry which is alert, ready and able to meet and adjust itself promptly, effectively and unselfishly to current conditions and changes as they take place will do both itself and the country the greatest service.

Such a principle is easy to state, but far from easy to put into practice. It involves close touch with current events and probabilities, study of what has been done in other warring countries, intelligent planning, careful selection and training of employees, effective cooperation with the public authorities and other companies, and a willingness, background and ability to take decisive and correct action immediately when the time for action comes. Opportunity knocks but once these days, and when it does, we must run, not walk, to meet it. If we are not ready, we shall take our places at the rear of the procession, and be directed by leaders more alert, but probably less able than ourselves, with little or no knowledge of the needs or rightful place of our industry.

Unlike much peace time operation, our plans today must be made in advance. In that respect they resemble those of a military commander, who must have done his studying and completed his preparations before the time for action arrives. If developments depart somewhat from pre-established plans, he and his subordinates must nevertheless have so thoroughly absorbed the fundamentals that they will almost instinctively do the right thing.

Quite naturally we look for guidance to our experience during the last war and to that of foreign countries in this one. England in particular has provided us with much valuable information on the protection of our properties and on the repair of air raid damage. On economic and current operating matters we are forced to conclude that conditions here are so different from those previously or elsewhere encountered that we have relatively little precedent to guide us.

Present Day Conditions

Consider the situation.

1. We are fighting a two front war, with fewer allies and stronger enemies. Therefore our needs for materials and manpower are going to be far greater than in 1917 and 1918; and it is already apparent that the economic dislocation will be far more severe.

2. There is already an acute shortage of raw materials, due not only to increased demands, but also to the cutting off of supplies by enemy action.

3. The present and prospective oil transportation situation is exceedingly serious, and promises to remain so for the duration of the war. There was an acute oil shortage during the last war, and high prices for it; but there was then no counterpart of present conditions.

4. Coal transportation facilities to New England are being taxed to the utmost, and a shortage of both coal and coke seems to be in prospect, if it is not already here. This is in spite of the removal of inventory restrictions by the War Production Board on February 12 and an order urging utilities and other large users to build up stock piles.

5. Priorities and price control have been established, as in the last war; but present restrictions are much more far reaching, and I believe, generally more ably administered.

6. We are in a period of sharply rising prices. There is as yet no federal control or freezing of the wages of labor, nor effective limitation on the prices of farm products. Until these, like other prices, are held in check, inflation will continue, in spite of all efforts to prevent it.

7. Many gas companies face serious capacity problems. The concentration of industrial activity in certain localities, with consequent violent shifts in population, the possibility that whole areas may be evacuated in the event of intense military action, the great and continuing development of gas for industrial purposes and its essential place in war production plants, and finally the extensive use of oil and gas for house heating, all must exert a very important influence on the present and potential load which gas companies in New England may be called upon to meet. Scarcity of house heating oil is likely to lead to the almost uncontrollable use of auxiliary gas space heating equipment, including gas range ovens.

8. There is a shortage of manpower, which will inevitably become more serious.

War Production Will Have First Consideration

To meet the national emergency,

Presented before The New England Gas Association, Boston, Mass., March 19, 1942.

production considered essential to the war effort is definitely going to have preference in the order of its essentiality. Civilian needs and comfort, beyond bare necessities, as well as non-essential industries, will take subordinate places. We shall be safe in assuming that this principle will even be applied to gas output if occasion should arise.

In general, our industry is looked on as highly essential, especially where it is serving war production plants.

Like all industries, we must plan to get along with the equipment and facilities we now have to the greatest possible extent. Only in extreme cases of inadequacy because of the demands of war industries, or of vitally needed replacements, including those made necessary by damage, may we expect to get anything new, especially if it involves the use of steel or other critical metals. Equipment for improving operating cost is out. Efficiency and economy, measured in dollars, have been thrown to the winds. Production capacity and the saving of critical materials are the objectives today.

At the same time, you will be faced with shortages of oil, gasoline, automobile tires, solder, meters, customers' appliances and repair parts of all kinds; and these shortages are likely to persist for the duration of the war. The military services have taken and will continue to take some of our men, and we may confidently expect a decrease in labor efficiency. Inflation is already here, and prices are rising.

The picture is not a pleasant one; but you have met difficult situations before. I think you can meet this one if you are willing to plan in advance, if you secure the cooperation of the authorities and if you are ready to act when the time for action arrives.

Meeting the Demand for Gas

Take first the matter of getting the necessary production out of the facilities we have and the materials we can get.

Along with an increased demand, you may find it necessary to use poorer grades of generator fuel; and shortage of oil may force you to eliminate all blow-run and reforming, with consequent reduction in set capacities. You may be obliged to shut down for extended periods during air raids and your plants may be damaged by enemy action. Your holder capacity may be reduced because of decommissioning waterless holders or because water seal holders should be kept low during periods of air raid activity. Thus you may be facing serious capacity problems.

Normally, a company making horizontal retort coal gas could increase production by injecting oil into the retorts. One making mixed gas could pull the retorts harder, make more coal gas of lower heating value and compensate with a higher heating value water gas, the capacity of the sets being also increased by the greater use of oil. Finally, one making water gas with heavy oil could use more oil for both reforming and enriching and make more blow-run. But you will note that virtually every plan for increasing generating capacity without new equipment involves the use of more oil. Since oil is going to be scarce, I am afraid we must discard them all except for temporary emergencies.

There may well be instances in which it will be necessary to forget time-honored conservative practice and operate both spare and active equipment. Therefore, as nearly as possible all plant equipment should be kept constantly in condition for service.

Deficiencies in the capacity of auxiliary plant equipment are generally somewhat less serious.

Washer cooler capacities may generally be increased by providing more cooling coils, which may or may not now be obtainable, and by increasing the rate of liquor circulation. In extreme cases, the cooling water may be used directly through the sprays instead of liquor.

The use of a garden sprinkler on the crown of the relief holder to help cool the gas should not be overlooked in these days of necessary expedients. The type of sprinkler is of some importance, and the object should be to secure the maximum evaporation and air cooling above the holder crown.

If tar extractor capacity is inadequate, a makeshift shaving scrubber, made from an old purifier or wet scrubber shell, may prove to be the answer.

Purification capacity is quite flexible. It can be substantially increased by more frequent changing of the boxes, although economy will probably suffer. Most satisfactory operating conditions will be secured if temperature in the boxes is maintained at 90° to 100° F., if there is adequate moisture present and if the oxygen in the outlet gas is maintained at ½ to 1 per cent, all as recommended in the excellent paper presented by Mr. E. L. Sweeney before your Operating Division in January, 1939 (New England Gas News, June, 1939, page 16).

Deficiency in steam generating capacity is generally most severe in the winter. It may sometimes be relieved by heating the holders with hot water rather than live steam. Condenser cooling water may be used, or a special circulating system may be installed, with the water heated by excess exhaust steam or other source of waste heat.

It is hardly necessary to say that distribution capacities can be raised by increasing pressures.

In places having medium pressure systems, it may be possible to conserve mercury by using iron case meters and no-seal regulators.

When all is said and done, we must frankly admit that the local steps which can be taken to insure the gas supply are definitely limited, unless we can get needed equipment.

Two possible general steps give ground for slightly more encouragement.

A company should interconnect with other gas systems wherever reasonably possible, and make agreements as to the conditions and under whose direction emergency interchange will take place. Clear understanding in advance may avoid misunderstanding and delay later. Very likely this has already been done.

Interruptible Service Schedules

If there is any reasonable doubt of its ability to meet the demand for gas under normal peak load or emergency conditions, you should consider very seriously the placing on interruptible service schedules of all large industrial and commercial customers whose operations are not essential to the war effort. During periods when the gas supply is in danger they should be shut off. This is perhaps the most effective step you can take to insure the continuity of your service.

To establish and enforce interruptible service schedules, you must have the approval and cooperation of your public service commission; and you should explain the situation frankly to the customers who may be affected.

Interruptible service schedules have been in successful use in the natural gas industry for many years. They violate certain traditions of the manufactured gas industry; but these are times without precedent. We all hope we shall never have to shut off a customer; but the time to think and plan what you might do is beforehand, not when you are in the middle of an emergency.

In emergencies in England it is reported that pressures have at times been reduced to conserve the stock of gas. It is possible that we may sometimes be obliged to take similar emergency measures here.

Whatever comes, we shall hope to live up to the tradition of the industry, which has come down through generations: Gas shall not go off the town.

Oil Transportation Shortage

Shortage of oil transportation will probably be with us until the end of the war. We shall wish to lend the authorities every cooperation in relieving the situation.

Companies using heavy oil can frequently reduce their requirements by decreasing blow-run and reforming, provided they are assured of an adequate coke supply. In combination coal and water gas plants, the production of a higher heating coal gas is likely to reduce the total enriching oil consumption. (See paper by Mr. R. E. Kruger presented before the 1941 A. G. A. Convention.)

On the other hand, I believe any substantial reduction in heating value standards should be adopted only as a last resort. Such changes would entail readjustment of all customers' appliances at a time when manpower is already inadequate, dislocation of some industrial gas equipment, dried out meter diaphragms at a time when replacements are likely to be scarce, and probably naphthalene and dust stoppages in mains and services. That was the experience in England during the last war, and consequently heating values were raised after the war was over.

While recognizing the shortage of propane tank cars, the possibility of securing a shipment in case of temporary emergency shortage of gas oil and of using propane direct from the car for partial cold enrichment should be constantly kept in mind.

Manpower Shortage

Manpower shortage is a serious problem.

The United States News on February 20 stated that the Army and Navy will be seeking at least 2,000,000 men in 1942 in addition to what they now have, and 5,000,000 more in 1943, making a total of about 9,000,000. On the basis of existing plans war industry will absorb at least 10,000,000 in 1942 and at least as many more in 1943. With the 5,000,000 now employed in such plants we have a total of 25,000,000.

By the end of 1943 it is expected that a total of 34,000,000 men will be in the military services and war plants out of 54,000,000 workers in the country, or 63%.

The deficiency must necessarily be made up by female labor, if at all. For the gas industry, however, this problem is particularly serious because so little of our work now done by men can be transferred to women. We can hardly visualize women charging retorts, stoking boiler fires or running water gas sets, to say nothing of working in the clinker gang. Nor does it seem likely that the use of garden tools will have fitted them for the pick, shovel and caulking iron, or for the grim repair work we may have ahead.

Some substitutions of female labor may still be made in the office forces and accounting departments of certain companies, but these generally were made years ago. Women might be used as meter readers on certain selected routes, or perhaps on light meter testing work. But essentially our operating departments are places for men only.

Therefore it is important that we continue to give especial attention to employee relations, wage scales, the training of salesmen for other lines of presently essential work, such as appliance servicing, and the adequate presentation of requests for industrial exemption of employees from military service.

Present transportation conditions and the possibility of air raids point to the desirability of locating key men in different parts of the territory, rather than having them all work from a central office, particularly where the system is spread out. Such men might well work from their homes and keep in touch with headquarters by telephone. Essentially they would be service men, but they would also make minor repairs and be charged with the duty of keeping in close touch with conditions in a given district and of reporting on damage or other needed work. The Appliance Servicing Manual, recently published by Boston University and prepared in cooperation with your Association would be invaluable in such a set up.

The use of bicycles fits in with such a plan; and at least one company has purchased a number of them.

Rising Costs of Operation

Finally, I have been asked by your committee to discuss the offsetting of rising costs of materials, labor and taxes. I assure you I have no rabbit to pull out of the hat. Nor is this a time for wishful thinking.

No doubt every one of you has been striving for years to keep down costs, spending considerable time on the matter and purchasing new equipment to do it when it would show economies. Now your main problems are protection of your properties and getting the materials and manpower to keep them running. You can't buy new equipment to effect economies. If prices, wages or taxes go up, so will your costs. If these items stay the same, but labor efficiency and quality of materials decrease, costs will go up. You may defer maintenance for a while. In particular you may be forced by labor and material shortages to secure approval for extending the meter change period, and perhaps to alter your meter shop practice. Solder is difficult to get now and diaphragms may become scarce in the future. You may eventually have to extend the domestic meter reading period to two months. In England, you will recall, readings are made quarterly, and the same is true of some water companies in this country. Free servicing of appliances may be eliminated, and this has already been done by some New England companies. New business expenses may probably be decreased somewhat, but promotional effort should be altered in character, not eliminated. You must keep contact with your customers and keep them informed on what you are doing to insure their service during this period. Those companies which abandoned promotional effort during the last war fared badly afterward.

While you may be able to save a little by expedients such as these, increased costs seem inevitable. Their extent may vary greatly from place to place depending largely on whether the gas load has increased or decreased and the ease with which it has been possible to handle any increase without added capacity.

It is my firm belief that before this war is over most manufactured gas companies will have to seek increased rates; and it is highly important that they keep their records currently in such condition that the commission will be able to pass on the validity of any such request with a minimum of delay. In presenting such requests the conference rather than the case method is preferable under present conditions when speed is important. (See A. G. A. Monthly for March, 1942.)

Conclusion

In conclusion, it seems to me that our preparation and general plan of

action today should follow:

(1) Contact and cooperation with the federal, state and municipal authorities, including state public service commissions. The purpose of this should be to advise and assist them in the sound formulation and administration of priorities, allocations, restrictions, service regulations and other orders which affect our industry, so that our operations can be fitted into the national scheme to maximum advantage and our essential service may continue to be rendered with a minimum of impairment. Some of these contacts must be by individual company officials, others probably by our trade associations.

(2) Contact and cooperation with neighboring gas companies, and to a lesser extent, with other companies, particularly utilities. Many of our present day problems are so vast that we may hope to meet them only by cooperative action. Interconnections, pooling of repair equipment and plans for meeting disasters are some of the matters which merit consideration.

(3) Planning to meet our many local operating problems.

National events are changing with unprecedented rapidity, so the subject of gas company operation during war is an ever changing one. What has been said here may be obsolete within a month; but one thing can never be obsolete and that is being always prepared, ready and willing to take action when the time for action arrives. And so it seems to me that our job today is fundamentally one of cooperation, knowing our business and being everlastingly alert.

Remember Pearl Harbor, but do like MacArthur.

Sand-Bag Barricades Built With Asphalt-Sand Mixtures

Sand bags for barricading important buildings in San Francisco against air-raid damage are being filled with a combination of sand and asphalt, rather than sand alone.

The mixture is highly resistant, the San Francisco Department of Public Works reports, can be tamped into shape, and most important, within a short time becomes so stabilized that it will not run or disintegrate when the bags are cut or rot away.

A very small amount of asphalt cement, about 3 per cent, is mixed with fine sand. The mixture is heated with regular asphalt-heating equipment, and can be sacked by a two-man crew at the rate of 200 bags an hour. The sacks are filled only to about 60 per cent of capacity, with approximately 160 pounds of the mixture, so that plenty of free play is left for tamping into position in the barricade.

Sand-bag barricades have needed frequent replacing, particularly if the sand was wet, because the burlap rotted quickly and the sand ran off. The sand-asphalt mixture, however, will remain in place undisturbed even if the sacking is entirely cut away.

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Illustration at the right is an important "Cleveland" feature. Truck speed transportation on special trailers. They load and unload in 10 to 15 minutes.

A.G.A. Industrial and Commercial Conference Points Way to Greater Part For Gas In War Production

More than 250 industrial and commercial delegates from gas supply and equipment companies from 26 states and Canada attended the A.G.A. Industrial and Commercial Gas Conference. Throughout the two-day conference at Hotel William Penn, Pittsburgh, Pa., March 12 and 13, the papers, attendance, executive interest and cooperation from those outside the industry emphasized the significance of the part played by industrial and commercial gas in war production. All attending went home with concrete information to help them speed war production in their territories. There was a serious note to the whole Conference which was reflected by each speaker as point after point was brought out showing how industrial and commercial gas and equipment can be more effectively utilized to increase war production.

George F. B. Owens, Assistant Vice President, The Brooklyn Union Gas Co., and chairman of the Industrial and Commercial Gas Section called the Thursday morning session to order promptly at 9:30 a.m. Edward M. Borger, President, The Peoples Natural Gas Co., Pittsburgh, led off the 31 speakers who participated in the Conference. Sounding the keynote with an address on "Industrial and Commercial Gas Engineers—Their Vital Role in the War Effort," Mr. Borger said, "Your job is vital—because vast quantities of war production depend upon gas."

"Scientific research of the practical type has in the past twenty-four years been the most important item in the advance of industrial gas," declared Henry M. Heyn, Manager, Heat Treating Division, Surface Combustion. As proof that "industrial gas has gone to war," Mr. Heyn cited examples of peacetime developments that will lead in bringing victory and peace. Process furnaces for carburizing, clean or bright hardening and convection heating are being applied to the manufacture of hundreds of thousands of jeeps, peeps, and mobile fortresses of all kinds . . . direct gas flame annealing of wire has made it possible to fly and fight with airplanes at 25,000 feet . . . the gas furnace that has a capacity of, and is turning out 82 miles of 50 calibre machine gun bullet clips a day. These and many others were only a short time ago little more than theoretical discussions. Mr. Heyn noted that the American Gas Association Committee on Industrial Gas Research had been a pioneer and leader in the field of improving industrial utilization through research.

"Never was there a time when the industrial gas engineer can be of so much service," declared J. P. Leinroth, Public Service Electric & Gas Company, Newark. "Not only can the industrial gas sales engineer assist in meeting new heat treating problems," he further stated, "but also in helping his customers secure sub-contract work, in getting new plants properly located, in securing the right type of industrial and commercial gas equipment, in servicing existing equipment." In summary, he declared, "by seeing to it that gas is applied in the most efficient manner and in the most modern equipment we are at once helping war materials production and building prestige for gas."

Alexander Forward, Managing Director, American Gas Association, in his talk, "Our Industry in War Time," expressed his faith that industrial and commercial gas engineers and engineering salesmen are equal to and indeed ahead of the demand. "The gas industry has always been noted for its adaptability . . . it can well be proud of the manner in which our industrial and commercial gas men have measured up," declared Mr. Forward.

Featured speaker at the Thursday Luncheon was William E. Leverette, Assistant to the President and acting General Manager, Nashville Gas & Heating Co., Nashville, Tenn., who voiced the question, "The Termination of the Emergency — Then What?" Mr. Leverette traced the course followed by his company in meeting very severe competition on the one hand, and doing its share of war work on the other. He predicted some of the things industrial and commercial gas men would be up against as the war continued, and gave some stimulating advice on how they can best be met.

Leading off the Thursday afternoon Industrial Session, D. H. Thorburn, Manager, Industrial Gas Department, United Gas & Fuel Co. of Hamilton, Ltd., Hamilton, Ontario, described "What the War Effort Is Doing to the Gas Business in Canada." "For a base period of 1938 and 1939, my company's industrial gas sales represented 57% of total gas sold," stated Mr. Thorburn. "Today, three major war production plants in our district have a combined total gas load equal to our prewar total gas production capacity." To cope with the steadily increasing load it was found necessary to cease selling gas for any form of space or central heating, and later customers were asked to remove all conversion types of heating equipment. "In spite of these moves, Mr. Thorburn declared, "the load continued to increase and we were faced with the necessity of making a major plant extension."

"The industrial space heating load is an important aid in the war program," observed James E. Dare, Public Service Co. of N. Illinois, Streator, 1942 chairman of the A. G. A. Industrial Space Heating Committee. "It assists and accelerates the production of war materials vitally needed to win the war." He further pointed out that conservation of critical metals can be attained through the installation of gas-fired unit heaters—that there are sufficient types of industrial gas-fired air heating equipment available to insure satisfactory space heating where gas supplies are available. "However," he summarized, "it is essential to estimate gas consumption correctly and accurately, to size and locate equip-

AT THE A. G. A. INDUSTRIAL AND COMMERCIAL CONFERENCE

Left: Major L. A. McQuown, Utilities Division, District Ordnance Office, Pittsburgh, addressing the Thursday morning session on "Fuel Problems Confronting the War Production Program".

Center: (l. to r.) Harry M. Woolman, Jr., Jersey Central Power & Light Co., Asbury Park, N. J., Chairman, Food Service Equipment Committee; Daniel J. Brogan, The G. S. Blodgett Co., Inc., Burlington, Vt.; F. Russell Howe, Rochester Gas & Electric Corp., Rochester; W. S. Anderson, Boston Consolidated Gas Co., Boston, Mass.; and W. W. Young, Waterbury, Conn.

Right: C. H. Lekberg, Northern Indiana Public Service Co., Hammond, Ind., at the registration desk.

ment properly, if we are to obtain the load and minimize future complaints." Gas utilities, he believes, are the logical source for sales engineering service to insure securing and holding this load. Mr. Dare distributed a valuable new engineering bulletin prepared by his committee.

The session closed with a forum on "What Is Our Most Acute Industrial Gas Business Problem?" It brought expressions of opinion from the following industrial gas managers: F. T. Brooks, Philadelphia Electric Co.; S. T. Olinger, The Cincinnati Gas & Electric Co.; and W. D. Thompson, The Laclede Gas Light Co., St. Louis. A lively question and answer period was participated in by the whole audience.

F. E. Vandaveer, Assistant Director, A.G.A. Testing Laboratories, and O. M. Olsen, Sellers Engineering Co., Chicago, opened the Friday morning session with a discussion of "Immersion Tubes for Industrial and Commercial Heating." Dr. Vandaveer outlined the research in gas heater design and operation just started at the Laboratories by the Committee on Industrial Gas Research. Five specific advantages were noted as generally ascribed to immersion heating by Dr. Vandaveer and Mr. Olsen, (1) maintenance of high thermal efficiency over a long period of service, (2) longer life of heating surfaces, (3) faster preheating resulting from reduced heat capacity of the structure, (4) lower initial cost, (5) convenience of application to existing tanks.

The Forum on New and Improved Industrial Heating Processes and Equipment, led by Lawrence E. Biemiller, Consolidated Gas Electric Light & Power Co. of Baltimore, was one of the highlights of industrial and commercial meetings of recent years. An array of talent headed by F. S. Bloom, President, Bloom Engineering Co., James Kniveton, The Selas Co., and Professor Trinks, got down to brass tacks on problems of making gas do double duty in every war production plant in the country.

Ben H. Gardner, Vice President, Columbia Engineering Corporation, and Vice Chairman, Industrial and Commercial Gas Section, presided at the Thursday Afternoon Commercial Session. F. Russell Howe, Rochester Gas & Electric Corp., delivered the initial address, "Gas Food Service Equipment—Sales and Service Under Present Conditions." He reviewed changing conditions in the hotel and restaurant field, and offered practical suggestions for helping gas companies meet them.

"What Is Our Most Acute Commercial Gas Problem?" was the question posed to commercial gas managers. J. R. Delaney, The Cincinnati Gas & Electric Co., Cincinnati, O., and Harry M. Woolman, Jr., Jersey Central Power & Light Co., Asbury Park, N. J., felt that their most acute problem was in the service field —bringing home to their commercial users the importance of conditioning their equipment at once so as to get the most out of the existing equipment and so "keep 'em cooking." To achieve this, they felt, we must inform chefs and hotel owners on ways and means of saving appliances and gas in the emergency. Details of how different companies are handling this matter were given.

The Thursday Commercial Session closed with a lively Deep Fat Frying Forum, participated in by the following: Raymond Little, Equitable Gas Co., Pittsburgh; Samuel E. Tappan, J. C. Pitman & Sons, Inc., Lynn, Mass.; Ray Trowbridge, Seattle Gas Co., Washington, and others. In brief: Mr. Little feels that while normal sales or sales programs cannot be carried on until the war is over, we must not be lulled into a false sense of security because of present lack of competition . . . that after the war, faced with lower competitive equipment cost, probable lower competitive rates and keener competition, the gas industry may lose some of the fuel cost advantage . . . that gas utilities along with gas appliance manufacturers should plan national sales programs — should study markets and accumulate helpful data so that later effort can be wisely directed. Mr. Tappan believes that one of the foremost demands today is the development of high-speed gas fryers to meet competition better . . . that it is entirely possible to meet higher speed requirements in gas fryers without resort to excessive heating surface temperatures with resultant fat destruction . . . that this ability to save on fat costs, combined with the economy of gas operation, will keep gas fryers well in the foreground . . . that the new A.G.A. Laboratories' Approval Requirements will provide a great incentive toward producing the best that we have. A joint paper by Ray Trowbridge and Carl Linde, Seattle Gas Co., was read, stating that they felt that in order to meet competition fully it was important to have gas immersion tube fryers of the counter and of the general duty types, comparable to the electric models both as to speed and selling price. Utilization data on comparative performance of gas and electric deep fat fryers was included.

"Are we neglecting an important defense job?" challenged G. M. Rohde, Jr., as he began his graphic presentation, "What About Industrial and Commercial Water Heating in Defense?" 'Any contribution we can make to keep skilled workers on the job will be an excellent aid in keeping production at a peak. The gas industry *can* do a lot to prevent epidemics from spreading by *telling* people how to use plenty of hot water to keep clean—it is our duty to make everyone realize the importance hot water plays in stopping disease transmission and building morale," he asserted. He pointed out that gas water heaters were being effectively used by many restaurants and taverns in Battle Creek, Michigan, to meet stringent dishwashing and utensil sanitation measures enforced by army officers by means of a permit system . . . that the success obtained there would probably influence action in other army camps. "Show your local health officer how to get temperatures from a gas water heater that will meet code requirements even in hard water districts . . . cooperate with the brewing industry—dirty glasses threaten to ruin their draft beer business . . . see that restaurant dishwashing facilities in industrial plants are correct and adequate . . . encourage hand washing and shower bath facilities for defense employees as a means of boosting their efficiency and protecting their health," Mr. Rohde urged in conclusion.

The Friday afternoon Commercial session opened with a discussion of "Design and Engineering Developments in Hotel and Restaurant Equipment," presented by Edwin A. Jones, Products Engineer, Majestic Manufacturing Co., St. Louis, Mo. Mr. Jones had no inferiority complex for gas equipment when telling how commercial gas appliances can be designed and operated to meet anything competition has to offer. Using the streamlined, automatically-controlled gas griddle as an example, he reviewed from the technical, competitive, and business angles, the steps taken during its transformation from the old type, hand-controlled griddle. He demonstrated each point on a specially made model.

The Forum, Stretching the Life of the Commercial Appliances on Our Lines, was led by Harry M. Woolman, Jr., Chairman, Food Service Equipment Committee. Leading equipment manufacturers, including Walter D. Crouch of Robertshaw, Daniel C. Brogan of Blodgett, E. J. Shermire of Garland, and John W. McNair of Vulcan, assisted Mr. Woolman. Many utility men told of local plans being put into effect to stretch the life of commercial appliances, all of which were helpful to those present. Every manufacturer, however, cautioned against failure to keep on selling new equipment now, pointing out that equipment can be shipped in reasonable time.

Handy Kink for Making Pipe Bushings Out of Standard Pipe

By

W. F. Schaphorst, M.E.

Newark, N. J.

Do you know that first class pipe bushings can be made out of standard pipe? Many users of pipe don't know that it can be done. Or, if they know that it can be done they don't know the correct size of drill to use for tapping. I have occasionally made bushings out of pipe, but each time I found it necessary to first look into my handbook for the drill size to use and that is so much trouble that it is frequently easier to go to the store and buy a new bushing. Recently, though, I collected all of the data together for all bushings that can be made out of ordinary sizes of extra heavy and double extra heavy piping, compiled the figures in tabular form, and here they are.

For example, to bush from ¼" to ⅛" get a piece of ¼" extra heavy pipe sufficiently long for cutting the outside thread. Then cut the end off to the desired length, drill or ream with a 21/64" drill (diameter of drill 0.328") and then tap with a ⅛" pipe tap. That's all there is to it.

This accompanying table tells the complete story for all ordinary sizes: Note that in one case, ⅜" to ¼", the internal diameter of ⅜" extra heavy pipe is such that no drilling is necessary.

Also note that in bushing from ½" to ⅜" either extra heavy or double extra heavy piping can be used.

To Bush From	Use This Size Pipe.	Use This Size Drill or Reamer.
1/4" to 1/8"	1/4" extra heavy.	21/64" drill = 0.328"
3/8" to 1/4"	3/8" extra heavy.	None.
1/2" to 1/8"	1/2" double extra heavy.	21/64" drill = 0.328"
1/2" to 1/4"	1/2" double extra heavy.	27/64" drill = 0.422"
1/2" to 3/8"	1/2" double extra heavy.	9/16" drill = 0.562"
1/2" to 3/8"	1/2" extra heavy.	9/16" drill = 0.562"
3/4" to 3/8"	3/4" double extra heavy.	9/16" drill = 0.562"
3/4" to 1/2"	3/4" double extra heavy.	11/16" drill = 0.688"
1 " to 3/4"	1 " double extra heavy.	29/32" drill = 0.907"
1 1/4" to 1 "	1 1/4" double extra heavy.	1/16" drill = 1.125"
1 1/2" to 1 "	1 1/2" double extra heavy.	1/16" drill = 1.125"
1 1/2" to 1 1/4"	1 1/2" double extra heavy.	1-15/32" drill = 1.468"
2 " to 1 1/2"	2 " double extra heavy.	1-23/32" drill = 1.72 "
2 1/2" to 2 "	2 1/2" double extra heavy.	2- 3/16" drill = 2.187"
3 " to 2 1/2"	3 " double extra heavy.	2- 9/16" drill = 2.562"
3 1/2" to 3 "	3 1/2" double extra heavy.	3- 3/16" drill = 3.187"
4 " to 3 1/2"	4 " double extra heavy.	3-11/16" drill = 3.688"
4 1/2" to 4 "	4 1/2" double extra heavy.	4- 3/16" drill = 4.187"

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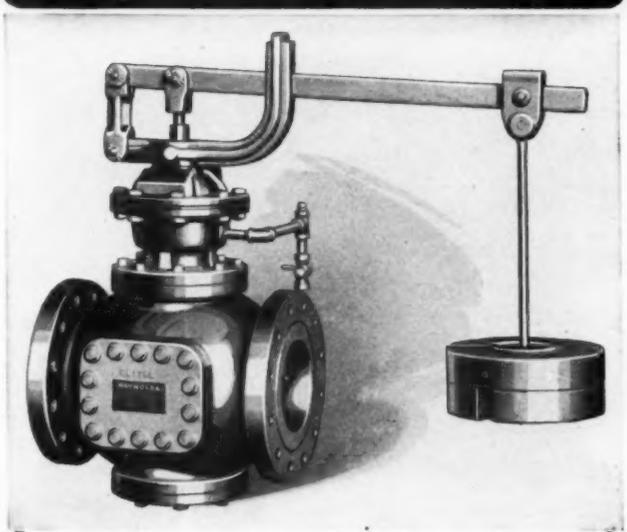

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"What About Restrictions?"

By
Watson E. Derwent
President, Association of Gas Appliance & Equipment Manufacturers

THIS SUBJECT is not a pleasant one to discuss but personally I believe that we should face the facts, and recognize what our Government is trying to do in our all-out war production effort.

It has seemed to me that news has been suppressed, and therefore we generally have an unduly optimistic picture of the war situation as far as the general public is concerned. I am of the opinion that the citizens of this great commonwealth can take it, and that our governmental program will be helped instead of hindered if information which will not be beneficial to the enemy, whether it be good or bad, be made known to our people.

We have been facing, as an industry, restrictive orders for months prior to their issuance, and many of us have not recognized what the "wild winds were saying," but have felt that eventually somehow, somewhere, up to the time of the Pearl Harbor incident, we would be able to continue a normal business and industry operation.

Things have been moving pretty fast since that first week in December toward the all-out effort and war production, and whether we individually, or collectively like it or not, we must face the inevitable, and every mother's son of us do our part and strain our every resource to bring about a successful running industrial machine that will enable the democratic powers of the World to bring to a conclusion the barbaric reign of terror that they now face.

Restrictions? Of course—many of them, and more to follow. They are absolutely essential if the job we have to do is to be done.

We in the manufacturing group of our industry are ready and willing to do our part, and we know that the gas utility industry is more than ready to do theirs, and this industry —when this emergency is over, I know, can look back with pardonable pride on its achievements, and that is as it should be, and as it will be.

We in the manufacturing end of the industry have had one restrictive order after another which we have endeavored to meet promptly and cooperatively, and at sacrifices to our industry.

Our first real jolt came with the issuing of the restriction on aluminum and aluminum alloys, and we in this industry know what the meaning of that order eventually meant to our industry. Good soldiers that we were and are, we immediately took steps to substitute other materials, and were able to continue, with the cooperative help of the Aluminum and Magnesium Division of the Federal Government, to serve you, our customers, and yours.

Then along came the Copper Order, M-9-c, in October and again we felt the same jolt, but went to work with every bit of ingenuity in our industrial group to comply with the Order and yet continue to serve you, our customers, and you, yours. The full effect of these two metal orders was not immediately felt, but certainly industry is feeling them now.

Then along came limitation orders for various branches of our industry. All have not as yet been issued, but will be. For the sake of illustration, let's look at the Limitation Order L-23, affecting the Cooking Stove Industry as a whole, and when I say Cooking Stove Industry I mean all types of cooking stoves using all kinds of fuel. This Order limited production during the first quarter of 1942 by cutting production by approximately 40 per cent. This varies according to the size of industrial plants and their volume.

We who have to do with the Cooking Stove Industry have consistently felt, and still do, that our unit is essential to the welfare, health and morale of the general public, and no later than two weeks ago in Washington one of the governmental bureau heads publicly stated that this industry was an essential one, and was so recognized, but he also said that our war and defense program must come first, and that a very small percentage of the normal production could be provided for in the way of raw materials which are so necessary to our all-out war production program.

You all are familiar with the desire and the necessity of putting every piece of available equipment, and every ounce of man-power, behind our war production program because speed and time are paramount.

This brings us to the conversion of industries, particularly those using metals, to full war production. You are all familiar with what has happened in the automotive industry, the washing machine industry, and the mechanical refrigeration industry, and with those examples before us it is not difficult to visualize what is going to happen to other group members of our industry, and those of all industry. The government, in working out this conversion program of industry, are appointing industrial advisory committees to work with them to the end that conversion can be made in the minimum of time, and to the end that all machines and manpower in each industrial group can be used to the limit.

An upset of industrial groups of this kind to bring about this necessary action can not be accomplished except over a period of weeks and months, but with the full cooperation of each industrial group it will be speeded to the utmost. It is a foregone conclusion that the Cooking Stove Industry, as so set up in Washington, is on its way to a full conversion to war production, and what essential units are eventually deemed necessary only will be produced.

Let us consider also for a minute the restrictions regarding sale terms. The increasing down-payments and limitation of the time element was ordered for exactly the same reasons that the limitation orders on industry and the metal orders were issued. You in the utility industry are familiar with Order 68, which restricts the drilling of new gas wells. You in the industry are familiar with Order L-31, which restricts the sale of house heating and space heating in the natural gas areas, and these orders were issued for exactly the same reasons that others of similar character, and previously referred to, were issued. Primarily the effort behind these orders was dictated because of the necessity of using the strategic metals in war production.

You are all familiar with the orders of the Office of Price Administration, in putting a ceiling on prices of various commodities and restricting sales of various commodities, and while there have been numerous orders to date, many more will follow.

An important factor in bringing about all of these orders also was the

Presented before the New England Gas Association, Boston, Mass., March 19, 1942.

fear of inflation, brought about by spiralling prices, large payrolls, and the bidding for limited amounts of various merchandise. Probably this fear has had as great a weight in effecting limitation orders of various kinds, particularly those affecting sales and prices, as any other factor.

Along with the limitation orders has been the question of increasing taxes which are heavy, but which will be very definitely increased. When we stop to consider that through the Lend-Lease Act, and the appropriations already approved, we have a total of 140 billion, 700 million dollars authorized, we know that we, the people of America, must meet that bill and we, the people of America, will. This question of taxes is another factor that affects all commodity industries, as well as the great gas utility industry, and has its affect on production and sales.

All of these restrictive measures will bring a full realization to the general public, and to every homeowner, what this great program means and its affect upon them as individuals.

Our problem, therefore, is to coordinate our efforts in the industrial groups, to the end that the greatest production and the greatest use of machine and man-power can be brought about, and with no thought of limited hours in any day, week, month or year. We must also do the job of financing this tremendous program, and without thought to the sacrifices we individually must make to bring about this accomplishment.

We should face the situation squarely, and I am sure that we are now doing so. The first and the all-important job is that of winning the war.

What should we in our industry do along the line of preserving the reputation for our fuel and the products through which it is used during the period immediately ahead and keeping in mind that there comes an end to all things, that when this time arrives we in this industry will be again in a highly competitive field—more so, in all probability, than has been the case up to this time, and should we not be planning our post-war activities? We should maintain a sales staff. We should solidify relations with customers and prospects. We should keep our dealers informed of our activities. We should invest nominal sums in advertising so that our industry is constantly informed about what we are doing, and we should be thinking of financing post-war activities now and not wait until that time is upon us to do so.

We in the manufacturing group are convinced that these things must be done, and the best thought and the use of the best brains in our industry should be put behind this type of program so that when the time arrives and civilian supplies can again be made available in volume, we are in a position to maintain the place we have occupied for many years, and that our fuel is recognized as the best fuel where heat is required.

That, in my judgment, is a matter for the industry in all its branches to be thinking about and working on, and the recent action of the Domestic Range Committee in setting up cash prizes for companies who do the most constructive job in the next twelve months along the lines of preserving the fuel reputation is evidence of the fact that we are not going to sit idly by and permit competition to upset our apple cart. Much can be done by the various branches of our industry individually and collectively, and the ultimate goal can only be achieved by constructive thinking and action.

The Association of Gas Appliance and Equipment Manufacturers has rendered, you will agree, a great service to their members and to their industry, and we as an Association have no idea but to make a continuing effort in these perilous times for now, more than ever before, there is strength in unity. The directors of our Association have planned their activities to meet the conditions ahead of us, and fortunately we have resources which are, and will be carefully husbanded to the end that we can continue to serve the purposes for which our Association was set up.

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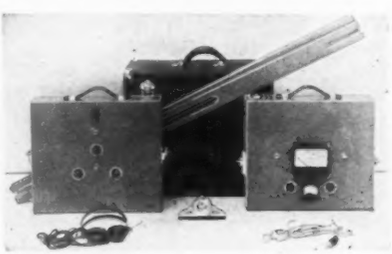

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Victory Gardens and Rifle Range Planned by Servel Workers

Reflection of war days is seen at Servel, Inc., Evansville, Indiana, in the Garden Club to be organized as part of the Victory Garden Club sponsored by the Office of Civilian Defense, and the building of a new rifle range on the company picnic grounds.

The range is in response to the great demand for such facilities during recent war months. The Garden Club will seek to cooperate in the government's food conservation campaign; help increase the food supply, and ease the strain on the family budget.

Employes who join the Club will be eligible to receive certain literature on gardening, and to compete with their fellow workers for prizes. Results of their labors will be exhibited at a County Fair to be held at the close of the season.

Educational Slide Film Advances Employe Information Program At New Orleans Public Service Company

By
James E. Kearns

OF GREATEST ADVANTAGE to gas utilities under present war conditions are good employe relations, according to A. B. Paterson, president of New Orleans Public Service Company, Inc., New Orleans, La. Consequently, the gas departments of the Louisiana utility in cooperation with the general advertising office, have recently completed something new in employe-informational projects—a comprehensive slide film which makes up a visual presentation of the history, origination, distribution and utilization of gas in New Orleans, which is to be shown to employe groups in all departments of the utility, and to outside groups made up of gas appliance dealers, civic associations, engineers, etc.

Back in 1939, New Orleans Public Service embarked on an intensive employe-information program predicated upon the fact that employes of any large business organization today have a right to understand how their company operates, why it does this and that, and how business conditions are from all standpoints. "More important is the fact that each employe is a key man in the organization because he represents the company in contact with the public" Mr. Paterson outlines. "Better operation and public goodwill can come only through well-informed, thoroughly educated employes who know what the gas department job is, and how it is being done. We wish every employe of the company, no matter what his position or how little he comes in contact with them, to know the whole story of the gas departments, and to be able to intelligently discuss them with the people he meets on the outside on business, and at other opportunities."

To make this possible, the New Orleans Public Service Company split its entire 3000 employes (consisting of transportation, electrical service and gas department employes) into "conference groups in 1939—main units composed of entire departments under the executives of those departments, and small discussion groups of from 30 to 35 persons headed by foremen, office managers or key men in sectional departments. Groups thus classified meet regularly at bi-monthly intervals to learn developments of company business, and to discuss in open-forum style anything of interest at the moment. The groups are brought together frequently for larger personnel meeting; otherwise function in small units which can be more properly handled.

At the same time a series of "textbooks" on the utility consisting of information booklets to be distributed consecutively at meetings, were produced by the advertising department. Eight of these were released on the electrical departments, for example, including a complete history of the establishment and growth of New Orlean's early electrical utilities through until the present company emerged. Others treated with "Things You Should Know About Public Service," "The Value of Our Jobs With Public Service," "Serving Our Customers," etc. Employes who read and studied the booklets emerged with an understanding of departments other than their own which has gone a long way toward building up company goodwill "from within."

Employes were asked to submit suggestions for company business method improvement, elimination of waste time and expense, etc., following the earlier stages of the program, and according to Mr. Paterson a huge number of useful points which were adopted.

The educational slide film, devoted exclusively to the gas departments, is the newest step in the program—designed for visual presentation of the same type of information conveyed by booklets in the past. The entire film, running approximately 30 minutes and consisting of 133 picture frames with sound, was filmed, recorded and produced by gas department engineers in cooperation with the advertising department, headed by W. J. Amoss. Though, of course, slide films prepared by AGA and other national associations were available, the company chose to develop its own for the specific New Orleans applications not obtainable with general-interest films. Photographs were taken for it by advertising department employes, and the "lecture" accompanying recorded by the voice of Mr. Amoss.

The film is split into three main divisions, Origination, Distribution and Utilization. It begins with a series of photographs depicting sources of supply of gas for New Orleans, pipelines bringing natural gas into the city, and some of the work done to improve transportation methods. Highly personalized, it shows photographs of company employes throughout, either in groups, or at their jobs. The distribution phase explains how New Orleans Public Service distributes gas to industrial and residential users, how holders allow retention of additional gas to meet peak consumption periods, and why such peaks occur. Safety features, reasons for observing them, and improved equipment are touched upon in turn. The transition from manufactured gas to natural gas in 1928 is recorded, and the results explained by a series of scenes illustrating the former gas manufacturing equipment and the newer pipeline structure. Again, employes in specific jobs are shown from frame to frame—actually, every employe of the gas department appears somewhere in the length of the film.

Under utilization, the role of gas in industrial production, shipyards, factories, smelters, etc., is demonstrated, as well as methods of providing better heat, cooking and other services to residences. The film tells how New Orleans Public Service engineers have met corrosion and electrolysis problems in New Orlean's corrosive, wet soil, explains why common activities are necessary. Finally, it winds up with a portrayal of the part of natural gas in development of defense and war production industries in the city, with a photo montage of well-known industrial firms converting to gas for better production in the emergency.

To distribute the film, the advertising department has purchased five slide-film projectors, four of which are in continuous use in the company meeting rooms and auditoriums

(Concluded on page 42)

National and Industrial Survival

By
Erwin H. Schell

Head, Department Of Business And Engineering Administration,
Massachusetts Institute of Technology

IN TIME OF WAR problems of national survival are intimately affected if not dominated by current military and naval events. When the struggle comes to its close, the final outcome exerts an even greater influence. Yet survival, as an issue, comprehends more than victory or defeat. There are ample illustrations in history of defeated nations which have survived the struggle in that their national entity, their ideology, their way of life has been permitted to continue. There are doubtless other illustrations of victorious peoples whose efforts have left them without the strength to carry forward with the unity that they had previously enjoyed.

In a great glass case, there was recently exhibited in Boston the mounted heads of two giant moose whose interlocked horns had brought death to both on some forest battleground where there was no one to identify the victor and the vanquished. Here survival had been denied, irrespective of the struggle's outcome.

There are mightier and loftier desires than those of mere survival that make the winning of the war a foregone necessity. But more than this, survival calls for strength to continue after the job is done.

When man survives against the furies of Nature he usually does so as the result of seeking some form of protection. He literally hides from the elements. This method is less effective where the aggressor is in human form. Then survival comprehends action. The act of surviving is an act of extreme forcefulness.

In the physical sciences we have a fundamental formula that holds force to be the product of mass multiplied by acceleration. Here the terms used have a technical meaning and to translate them otherwise would be to misuse them. Nevertheless, there is close parallel in the problem of national survival. The force necessary to survive will spring from the ever-accelerated movement of the vast body of ideas, concepts, beliefs, and convictions which lie in the hearts and minds of the people of our country. The mass of our countrymen may first be influenced to convert the direction of their forcefulness and to increase it quantitatively. Then will come the call for new and greater forcefulness springing from qualitative improvement. And inevitably and finally, there must be new strength springing from an accelerated spiritual awareness and resolution.

The Problem of National Survival

The problem of national survival in its simplest form is a problem of acceleration. In point of national resources, no one questions that we have the fundamental wherewithal to implement our survival and even the most modest among us would admit that as a people our standards of life and conduct compare favorably with those of other nations. The degree or extent of our forcefulness then depends upon the stimulus which is provided in order that we may turn, deepen and refine our powers to win the war and the peace. The greater the acceleration the greater the resulting drive, the greater the national forcefulness, the greater the strength to win and to survive. This task is irrevocably and indubitably the responsibility of our national leaders. As a nation our destiny is in their hands. Our sun will rise or set in terms of their decisions. Our spirit will soar or fall in terms of their character.

The Problem of Industrial Survival

Where a large aggregation of similar enterprises, a nation-wide industry is involved, the problem of industrial survival obviously is cradled in the problem of the nation. Yet there are aspects of the industrial situation which are within the discretion of its leaders to control. And here we have more of precedent to guide our thinking for industrial survival is an ever-present problem of current importance. The histories of the maritime industry, the carriage business, the bicycle manufacturer, to mention only a few, reflect the intimacy with which problems of sheer survival have been a part of our industrial fabric.

Future security and continuance as it lies within the range of industrial policy is based upon a further principle. War increasingly brings technical and scientific increase. In the last conflict, the physical and chemical sciences found much to contribute and thereby much to learn. Likewise medical science discovered much which otherwise would have been more slowly disclosed. Industries, in the present conflict, will participate, as never before, and thereby will be granted the right of first-hand observation of the enforced progress which wartime necessities bring, those basic discoveries that will assure that new life and strength for continued service which is the basis of security after the battle is over.

War effort to be successful must be evolutional effort. Ingenuity, inventiveness, enterprise, research must be at the heart of every patriotic activity. A war or a peace is never won by doing the same thing over and over. We must do it better every time. Here is democracy's major weapon. To fail to use it is to commit industrial suicide.

In a word the crux of the problem of industrial survival, is found in acceleration of method. Men whose sense of responsibility extends beyond the confines of a given establishment to cover the industry as a whole must be unremitting in their energies to advance its military, technical and social effectiveness. The great contribution of Frederick P. Fish of Boston to the automobile manufacturers through the pooling of basic patents for the industry as a whole, is a case in point. There will be other opportunities. Industries

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Presented before the New England Gas Association, Boston, Mass., March 19, 1942.

have lived and learned. They now must learn, in order to live.

The Problem of Association Survival

When the amoeba, which is one of the simplest forms of life among our moving creatures, is attacked, it changes its irregular outline into that of a perfect circle. Thus not only is a minimum of outer area in terms of volume exposed, but all internal relationships are more intimately unified.

The trade association provides the avenues for internal relationship necessary to the well-being of an industry—the nerve fibres which make for its unified consideration, decision, action and growth. In these times and in days to come, all such services will increasingly be tested in the hot fires of practical utility. Already there is evidence that some associations have found the key to their problem of survival.

The new emphasis in associational value is essentially one of increased perception. The trade association becomes the ears, the eyes—indeed the whiskers of the industry that it serves. Let us be humble. Progress in an entire industry rarely proceeds logically or in accordance with preconceived plan or pattern. Like the amoeba, some particularly enterprising portion of its anatomy reaches out—takes a dive at something and if it seems good—calls back, encouragingly, "Come on in, the water's fine!" Today the trade association must accelerate this process. During the last war, a brilliant doctor took his place behind the allied lines. In his headquarters were batteries of duplicating machines. To his laboratories came the most recent word of medical advance, born of the exigencies and ingenuities of the field hospital organizations. As fast as assured progress became known, word was flashed up and down the line so that the entire medical staff could benefit within the shortest possible interval.

Here is the sort of activity that will make the trade association an irreplaceable adjunct. It is the road to survival.

The Problem of Company Survival

It goes without saying that the responsibilities of our national leaders, our industries and our trade associations will be shared by the company. The distinction between these activities and those for which the company is primarily responsible is that the former will obviously be viewed as opportunities. The opportunity to collaborate in any way to accelerate the national effort, to stimulate and to implement the evolutionary advance of the industry, to disclose, to disseminate and to capitalize upon the sporadic outbursts of inventive progress which come to light—all these are activities in which the end result is so to be desired that cooperation is a privilege.

But there are forces for survival that we may not ask the nation, the industry, or the trade association to set in motion. Yet they are responsibilities which no company may overlook for they base the problem of survival insofar as it lies within company control.

Company survival is essentially a problem of maintaining operating momentum for when companies stop, they die rather rapidly. Operating momentum—the going quality of a company is insured by the presence of two quite different resources. The first objective is the presence of ready cash. Now, as never before, the company owes it to all parties at interest, and this of course includes the government, that it maintain an ample supply of liquid capital. It has been said that the first principle of statesmanship is that one hold one's job. Otherwise one cannot be a statesman. To paraphrase, the first principle of company survival is the presence of ready cash. Otherwise, the company cannot survive. This truism has been amply borne out by the experience of British establishments since the outbreak of hostilities. To maintain such a condition is a problem which contains many elements which need not be enumerated here. The dominating significance of the end-result is the fact to be emphasized.

It has been said that nothing so weakens the morale of men at the front as the presence of unreliable or defective fighting equipment. A gun that blows up does more harm than the fire of a battery of enemy artillery. Likewise behind the front, a company that blows up in the face of its community strikes a sickening blow at the spirit of those who believed that through it they were making a patriotic contribution. Solvent management is patriotic management in more ways than one.

The second objective vital to company survival calls for the maintenance of still another reserve—that of goodwill. The term as used here relates not only to employees, the community and customers, but to the government, the vendor, the executive staff, and last but not least, to the industry as a whole. Reserves of goodwill are, at times, more precious than fine gold. Once more, the problem is one of many aspects which should not now be discussed. But there is one important observation which may be made. The maintenance of goodwill, though a deep responsibility and a high objective for any company, does not take form as a result of effort. Rather is it the reward of active concern over the welfare and safety of those directly or indirectly at interest. Goodwill springs from the heart. Reserves are kept in this receptacle also and are only made available when the wish no less than the will is present.

In times of peril, human creatures tend to draw together. It has been so since the beginning. Indeed, it was probably the allure of mutual security that caused man to become and remain incorrigibly gregarious. In wartime we are more sensitive to human relationships, more eager to benefit from them. When we are met more than half way, the cockles of our hearts are warmed. We may even wish to reciprocate actively in some friendly way, if and when the opportunity offers. In the months and years to come, companies may find such resources not only favorable but essential to survival.

The Problem of Executive Survival

The line-executive, the man whose primary responsibility is to "organize the will" of those over whom he has supervision faces no less than nations, industries, associations and companies, the problem of survival. Upon what does the issue turn?

Not a great while ago in visiting a plant, one of the higher officials who was showing me about remarked, "I particularly want you to see the ——— department. Our man in charge isn't here today, but I want you to see the department anyway, and catch the spirit of it."

Just as painters are judged by their paintings, as cobblers were known by their lasts, so today's executives are measured by the morale, the spirit, the temper of their employees. All other virtues have become secondary.

The war increasingly is taxing employee resource. Fatigue rears it ugly head. Irritability, the recurrence of fancied injustices, absenteeism and tardiness, not to say defective work and personal injuries, are the inevitable companions of tired-

ness. These must be dealt with intelligently, sympathetically and with insight.

Uncertainty appears in a wide variety of forms. The future has become more concerning. In every household the lives of its members are more subject to sacrifice and difficulty. At the workplace, these influences may find expression in unexpected ways. Employee attitude, that unexplored region within the confines of every company, is an area of increasing significance. To maintain constructive relationships with workers under these conditions calls for human interest and compassion, as well as time, energy and concentration.

The faster tempo, the necessary readjustments, bring emergencies which call for self-discipline hitherto unrequired of the supervisor. In times of peace the eyes of the management are on the employees, whereas in times of war the eyes of the employees are upon management. Executive attitude is quickly reflected in the demeanor of the worker. To provide that positive practical atmosphere conducive to rhythmic continuous output calls for executive guidance which shows itself in disposition and outward character, no less than in action.

To direct patriotic fervor into constructive channels is no mean task and one which is only now beginning to be recognized. After the flag-waving—exactly what? This is the question which employees are beginning to ask and a practical and satisfying answer in terms of daily activities will be sought.

The executive who survives will be one whose department reflects the effectiveness of an organism rather than the formalities of an organization; whose employees reveal a coordination of effort and devotion of purpose which is of themselves, and seemingly apart from his direct influence. The executive who survives will be one who neither drives nor leads, but as some one has put it, "is always at the heart of difficulty and always in the hearts of his employees."

The Problem of Administrative Survival

In conclusion, thought may be turned to the problem of administrative survival—the survival of the higher officials—the presidents, and the vice-presidents.

Here we meet a curious paradox. The presidents with whom I have conferred seem to be little concerned with problems of their personal survival. They are chiefly hopeful that they may be permitted to keep their fighting boots on until the undertaker removes them. They all wish that they were young again although it is common conviction among them that they are much younger than their years would indicate.

The truth of course is that the administrator is the moving spirit within his establishment in each of the five activities which form a part of the process of survival. It is he who stimulates the will to change, to increase, to better, to win. It is he who is unsatisfied, to whom technical and corporate progress is as meat-and-drink. It is he who is first to contribute to and to capitalize upon his trade association relationships. It is he who guards the gates of solvency and opens the doors to corporate goodwill. It is he whose personality colors the spirit and temper of his organization.

Perhaps such description makes him appear a paragon, but this is not the intent. There is a widespread conviction among sincere students of management that men who have demonstrated the qualities which won

(Concluded on page 42)

Where unvarying low pressure is required

As a district regulator — at distributing or measuring stations — in industrial plants, institutions and housing projects — wherever low pressure gas is consumed in considerable volume, the C-F Low Pressure Regulator gives perfect control. Any inlet pressure up to 100 pounds can be reduced to a constant delivery pressure from 2 to 16 ounces. Fully balanced valve with soft-seat construction for positive shut-off. Inside valve may be removed for inspection without taking regulator from line. Furnished with or without automatic cut-off, a safety feature which closes regulator when line pressure fails, and must be reopened manually. For domestic service or other installations requiring less volume, the C-F House Regulator is unequalled in performance or durability, reducing line pressures as high as 500 pounds to delivery pressures in ounces. There's a C-F regulator for every requirement in the control of either high or low pressures. Specific recommendations will be made on request.

THE CHAPLIN-FULTON MFG. CO.
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War-Time Relations With Our Industrial And Commercial Customers

By
J. P. Leinroth
Public Service Electric & Gas Company
Newark, N. J.

AT THE Industrial & Commercial Sessions of the Annual Meeting of the A. G. A. last October in Atlantic City the main theme was the Defense Program. Since then we have entered into an actual state of war. Today our main theme is the War Program — our contributions, our responsibilities, our opportunities.

We are in the midst of an industrial production effort of war materials such as the world has not only never seen, but one of such vast proportions as the world had never dreamed. It is indeed difficult for one to comprehend the enormity of the program projected in money and man power. It is simply tremendous. Winning the war will transcend all other considerations and industry is being regimented to that end. It must transcend all other considerations.

Such a program brings with it, of course, many problems of first magnitude. There is the problem of dislocation of industry — the changing over from peace-time production to war-time production. Automobile plants will make aeroplanes and tanks, typewriter plants will make machine gun parts, chemical plants will make high explosives. Most non-war production industries will find it necessary to get into war materials production to at least some extent in order to get priorities for raw materials and plant equipment, if they are to stay in business.

This dislocation brings with it new production problems and with new production problems will often come new heat treating problems. The industrial gas engineer has a most important service to offer in the solution of these problems and service must be foremost in our thoughts. The prestige of the entire gas industry will in no small measure be gauged by how well we render it.

The service we can render often goes much further than that directly connected with heat application problems. For example the dislocation of industry which we are witnessing today often finds one plant looking for work while another plant is looking about for a company with which it can place orders on a sub-contract basis. Here the industrial gas engineer can render a valuable service. His knowledge of the plants in his territory can often result in bringing these two together.

New plants are being erected. We can help in the proper location of these plants so that gas in the amount they will require will be available. There is nothing so discouraging as to see a plant having many uses for gas locate far away from an adequate gas supply. How many times has this resulted in our competitors getting the business which rightfully should be ours? Today most new plants will appreciate your help in getting them properly located. Your Chamber of Commerce too will appreciate your cooperation in working with them to that end. Keep in touch with them.

In existing plants there will, of course, be the problems of new uses and increased production.

In each of these cases the real problem will usually be that of turning out the maximum amount of product in the minimum amount of time—even cost will be secondary to this. Emphasis, more than ever before, will be put on speed and automatic, continuous operation. The relative simplicity of gas burning equipment and its easy adaption to automatic continuous operations, of course, need no introduction to the industrial gas man. These advantages along with the others that go with gas have been in his sales kit since he started in business. He never had a better opportunity to demonstrate them all than at this time.

Fuels will be more difficult to obtain; deliveries will be more of a problem and supply looms up as a major consideration. These are problems for us as well as for our customers. Can we supply the gas required at the XYZ plant? Is the pipe obtainable for the main extension? Under what conditions can we afford to serve them? These and many similar questions will arise almost daily. Matters of policy will be involved and our war-time policies should be matters of mighty careful thought.

Never was there a time when the industrial gas engineer can be of so much service and never was he given such an opportunity to foster good will for his company and to increase its prestige in the community.

This is not a period when, in most instances, a large amount of time can be spent in developing equipment. I do not mean to say that we should curtail research and development. What I do say is that the urgent need is for the present. The manufacturer must start operating today—not two years from today. This means we must make the most of what knowledge and equipment we have and I am not so sure that this is not a good thing for I question whether many of us realize the wealth of information and equipment that is available from previous research and test work, and which we have not put to use. It will do us all some good to take stock of what is available. I am sure we will be agreeably surprised and encouraged if we thus appraise the progress we have made in the last decade.

Equipment will often be hard to get — particularly that of the right type. We shall often be tempted to recommend, in the exigency, installations and equipment which we know is not of the best. Let us resolve here and now to shun such temptations. Let us plead fervently for equipment of the right type—not only for the sake of our customers but also for ourselves and the gas industry. I am sure that there are many in this room who can remember the results of connecting to our mains installations that never should have been connected during the last World War. Certainly we do not look back with any particular pride on many of them. The oven or furnace failed to perform satisfactorily, production schedules were not met, quality standards were not maintained, much time and money was wasted by both the customer and ourselves, new vocabularies were developed, and gas was blamed and discontinued at the earliest possible moment. In the end we suffered a

Paper presented at American Gas Association Industrial and Commercial Gas Conference, Hotel William Penn, Pittsburgh, Pa., March 12 and 13, 1942.

setback in prestige from which we, in some instances, have not to this day recovered.

Fortunately the better we carry out our responsibilities the more good we do ourselves and our industry. For by seeing to it that gas is applied in the most efficient manner and in the most modern equipment we are at once helping war materials production and building prestige for gas.

If it is important that our customers install the proper kind of equipment it is no less important that we be on the ground to advise our customers what kind of equipment to install. I am afraid that we all too often are not on the ground soon enough. In too many instances, we allow our customers to order equipment without making a reasonable effort to check the type of equipment they are ordering and without carefully advising them as to the equipment they should buy; too often equipment is ordered without our knowledge; too often this equipment is not the type best suited for the purpose. This can only result in poor performance, dissatisfaction and loss of prestige on our part. Surely our advising in the matter of proper equipment should be one of our most important functions in these days. It calls for our having close contact with our customers and having their confidence. Certainly in most cases we can save a lot of trouble, dissatisfaction and headaches if we get into the picture early. The customer is more often than not inexperienced in the selection of proper gas burning equipment and can profit by our advice. Frequently too, in continuous operations requiring heat at some point, the machinery is good but the heat applications are poor. A little help on our part in the selection of proper gas burning equipment often can make the difference between satisfactory and unsatisfactory operation.

Due to difficulty in obtaining new equipment and to the need for maximum overall production, it is necessary that existing equipment last longer. Proper maintenance will become increasingly important. Advice as to the operation of the gas burning equipment, and service that will keep the burners in proper adjustment, will go a long way to add to equipment life. Let us step up our service to customers. We shall be well repaid for it now and in years to come.

It is expected that commercial equipment in particular, where priorities are more difficult to obtain, will be especially difficult to get. It seems to me that today one of the biggest jobs of our commercial men should be to keep close tabs on the operation of such equipment, pointing out to the customers the importance in these times of proper operation. The emphasis should shift more to work of this sort and away from our usual promotional and equipment sales efforts.

I have tried to point out a few of our responsibilities. The great contributions we are making in the installation of new equipment and the large increases in the use of gas for industrial and commercial purposes that we are showing, testify to the fact that we are meeting these responsibilities and that the missionary work, the development work, the research work, and our advertising and promotional work of the years just past are bearing fruit in a manner in which we may all feel proud. But at this time we should intensify our efforts—not relax them. It was never more important that we maintain our full complement of industrial gas engineers and that these men work harder, plan more carefully and be more alert than ever before. There will never be a time when good service will bear more fruit. Because new business is coming on our mains more easily should not be taken as a reason for cutting our force. We have an opportunity now to put gas for industrial and commercial purposes forward that we may never get again—the opportunity both to be of service to our country in this hour of need and to add to the prestige of gas as an industrial and commercial fuel. It is not too much to say that our future will depend in no small measure on how we perform now. Some day the war will be over and the sky will once more be bright. When that day comes most of us will have a lot of gas to sell. How will our customers look upon the use of gas for peacetime operations? Where will we stand then in comparison with our competitors? These and similar questions we should be seriously asking ourselves now. This is our golden opportunity to show industry what we can do. If we grasp it and take full advantage of it our future is assured.

I feel very strongly that this, in particular, is a time for some good hard and straight thinking and for our taking stock and a long-range view of our position. With that in mind I have just tried to put before you for serious review some fundamentals which I believe are particularly important at this time.

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Weight 5 lbs.

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War Production Board

Division of Industry Operations

Fuel Oil Limitation Order L-56

THIS ORDER and all transactions affected thereby are subject to the provisions of Priorities Regulation No. 1 (Part 944) as amended from time to time, except to the extent that any provisions hereof may be inconsistent therewith, in which case the provisions of this order shall govern.

Limitation on Deliveries of Fuel Oil

(1) No Supplier shall deliver to any Consumer in any area designated in List "A" who has Standby Facilities and no such Consumer shall accept delivery of Fuel Oil from any Supplier unless such standby Facilities are being operated to take the place of such Consumer's Fuel-Oil-burning facilities to the greatest possible extent and to effect the maximum reduction in such Consumer's requirements for Fuel Oil.

(2) No Supplier shall deliver Fuel Oil to a Consumer in any area designated in List "A" and no such Consumer shall accept delivery of Fuel Oil from any Supplier for the operation of: New or additional equipment unless such equipment was installed prior to 30 days after the effective date of this Order, or unless, in the case of new construction, the equipment was specified in the construction contract, and the foundation under the main part of the structure in which the equipment is to be installed was completed prior to 30 days after the effective date of this Order; *provided,* that the replacement of worn-out parts shall not be deemed to be the installation of new or additional equipment if the existing equipment is not adaptable to the use of other fuels; or

Facilities converted from other fuel to Fuel Oil unless such conversion has been completed prior to 10 days after the effective date of this Order;

Provided, that deliveries of Fuel Oil may be made by any Supplier to any Consumer for the operation of equipment or facilities specified in this paragraph in any case where such Consumer cannot use a fuel other than Fuel Oil, electricity, natural gas, or mixed natural and manufactured gas, either because any such substitute fuel is not available or because technical utilization factors prevent its use.

Conversion of Fuel-Oil-Burning Facilities

The Director of Industry Operations, or other person designated by him, may from time to time examine and investigate the Fuel-Oil-burning facilities owned or operated by any Consumer for the purpose of determining whether such equipment can be converted to the use of a fuel other than Fuel Oil, electricity, natural gas, or mixed natural and manufactured gas. In making such investigation, the Director of Industry Operations, or his representative, shall take into consideration all facts and circumstances which may relate to the particular problem, including the availability of such other fuel. If it is found that the Fuel-Oil-burning facilities of any Consumer may be converted to the use of such other fuel, and that a supply of such fuel is available, without an unreasonable expenditure upon the part of the Consumer and without working any exceptional or unreasonable hardship upon such Consumer, then the Director of Industry Operations may, after notice sufficient to permit such conversion, forbid further deliveries of Fuel Oil for use in such facilities.

Exception.

Nothing in this Order shall be construed to apply to the delivery of Fuel Oil for use in internal combustion engines.

Directions as to Deliveries.

The Director of Industry Operations may from time to time issue specific directions directing or forbidding deliveries of Fuel Oil to any Consumer.

Appeals.

Any Person affected by this Order who considers that compliance therewith would work an exceptional and unreasonable hardship upon him may appeal to the Director of Industry Operations, by letter or telegram, setting forth the pertinent facts and the reasons he considers himself entitled to relief. The Director of Industry Operations may thereupon grant specific exemptions or take such other action as may be consistent with this Order. Unless otherwise directed, appeals shall be filed with the Director of Marketing, Office of Petroleum Coordinator for National Defense, Department of the Interior, Washington, D. C.

Violations.

Any Person who wilfully violates any provision of this Order may be prohibited from receiving further deliveries of any material subject to allocation, and such further action may be taken as is deemed appropriate, including a recommendation for prosecution under Section 35A of the Criminal Code (18 U.S.C. 80).

Reports and Correspondence.

All reports required to be filed hereunder and all communications concerning this Order shall, unless otherwise directed, be addressed to: Office of Petroleum Coordinator, Washington, D. C., Ref: L-56.

Effective as of March 14th.

Pipe Fittings

Simplification of pipe fittings was ordered by the War Production Board Feb. 25th in Schedule II to Limitation Order L-42 covering plumbing and heating equipment, Schedule I, issued February 11, required simplification of iron, brass, and bronze valves.

The pipe fittings schedule, in its entirety, has already been issued as a simplified practice recommendation by the Department of Commerce Bureau of Standards under No. P185-42. Reduction under this program of the number of fittings in current use from more than 8,500 to less than 3,000 will satisfy 92 to 94 per cent of all demand, according to the Plumbing and Heating Branch of the WPB.

After March 1, grey cast iron, malleable iron, or brass, or bronze pipe fittings not conforming to the established schedule may not be produced, except with the express permission of the Director of Industry Operations.

Provision is made, however, for the delivery of any pipe fittings held in finished form by a producer on March 1, or those which had been processed in such a manner that their manufacture in conformity with the schedule would be impractical.

WPB officials said that use of the simplified pipe fittings schedule would release substantial amounts of critical materials which would other-

wise be tied up in slow-moving stocks. The schedule eliminates more than 3,600, or 73 per cent, of the cast iron fittings formerly produced; over 1,100, or about 50 per cent, of the malleable iron fittings; and 784, or about 60 per cent, of the brass or bronze fittings.

In addition to releasing urgently-required materials, adoption of the schedule will eliminate a great number of interruptions in production necessary to manufacture small quantities of items for which demand is limited.

A general industry conference preceded the adoption of Schedule II. The Limitation Order permits appeal by any manufacturer who is seriously affected by the requirements.

Maintenance of Refrigerating Equipment

Priority assistance for the maintenance of refrigerating equipment in stores and restaurants has been granted by Amendment No. 2 to Preference Rating Order P-100, issued March 9th by the Director of Industry Operations.

Under the terms of Order P-100, a preference rating of A-10 is assigned to materials for repair and maintenance of equipment for specified industries and operations. Today's amendment includes the maintenance of refrigerating equipment in stores and restaurants among the uses for which this preference rating may be assigned.

Repairs, Maintenance, and Operating Supplies

Amendment No. 2 to Preference Rating Order No. P-100 As Amended

Section 958.2 (Paragraph (b)(1)(iii) of Preference Rating Order P-100) is hereby amended to read as follows:

> Any person located in the United States, its territories and possessions, using tools or equipment to repair or maintain agricultural machinery, refrigerating equipment located in stores or restaurants, or the property of any Producer as defined in (b)(1)(i) and (ii).

Section 958.2 (Paragraph (b)(5)(i) of Preference Rating Order P-100) is hereby amended to read as follows:

> "Any Material which is physically incorporated, in whole or in part, into any Material which the Producer manufactures, distributes, sells, stores, or transports, excepting Material used by a Producer to repair or maintain refrigerating equipment located in stores or restaurants, agricultural machinery, or the property of another Producer, or"

This amendment shall take effect immediately.

Gas Masks—Order L-57

Manufacture or sale of gas masks and anti-gas devices for protection against enemy attack was banned March 3 by the War Production Board, unless the masks and devices were actually on order by agencies of the Government, including the Office of Civilian Defense, and are built to Army Chemical Warfare Service specifications.

Limitation Order L-57, issued after consultation with the Chemical Warfare Service and the OCD, is designed to halt a fast-growing sale of unapproved gas masks to the civilian population, and to effect the most complete standardization possible.

The order also prohibits the delivery or sale of any laminated cloth, laminated glass or plastic lenses, metal buckles or buttons, primary or activated charcoal, rubber, synthetic rubber, webbing, or duck for use in unapproved masks.

Masks manufactured for fire-fighting, mining, industrial, scientific and similar non-military purposes are not affected by the order, provided they are advertised and sold for such purposes.

Producers who have manufactured or sold any unapproved gas masks or devices since January 1, 1941, or who had in their possession or under their control more than 10 such masks or devices on the effective date of the order are required to report to the WPB on form PD-328.

War Production Board officials said that continued production of gas masks for civilian purposes, made according to specifications unapproved by the Chemical Warfare Service, is likely to cause a drain on and improper use of scarce materials.

The only masks which have proved effective against all known war gases are those manufactured according to the CWS specifications, established after years of research on the subject. Army and noncombatant masks, made according to these specifications, are somewhat similar in design and appearance. A canister containing chemical and mechanical filters is attached to the face-piece of the civilian masks, as contrasted to the Army service device which has its canister in a carrier bag connected to the face-piece by a flexible hose.

Both approved masks provide protection to the face and respiratory passages from war gases.

The formula used to manufacture the Chemical Warfare approved-mask is confidential, and cannot be distributed through the industry, nor could private manufacturers obtain the requisite amounts of activated charcoal which is a prime essential of the formula. The Government controls the principal supply for military needs.

Diversion of facilities or materials for private manufacture and sale would only act to hinder a projected production program for civilian use, to be undertaken by the Chemical Warfare Service and the OCD. Any hardship caused the industry will be counteracted by subcontracting the approved masks as widely as possible.

Priority Orders and Forms Listed

A printed compilation of priority orders and forms is now available for distribution at the Public Service Section, Inquiry Division, Room 1501, Social Security Building. It is called PRIORITIES IN FORCE, and is an alphabetical listing of all the orders in the M, L, P, E, and Suspension series, that have been issued by the Bureau of Priorities, Division of Industry Operations of the War Production Board, through February 15, 1942.

A series of weekly supplements to the printed compilation will be issued, devised to keep the listing up-to-date and as effective as possible.

Office of Civilian Defense

Plant Protection

To insure the uninterrupted supply of war materials, committees representing the Army, Navy, and the Office of Civilian Defense will be established soon in each of the nine regions to assist local authorities in identifying Army and Navy plants for special protection, it was announced March 19th by James M.

Landis, Director of the Office of Civilian Defense.

In instructions to the nine regional directors of the OCD for transmission to state and local defense councils, Director Landis declared:

"The increasing production demands for war purposes emphasize the importance of protecting manufacturing plants to insure the uninterrupted supply of war materials. The War and Navy Departments have added passive air raid protection to their measures for internal protection of industrial plants.

"The War and Navy Departments and the Office of Civilian Defense have agreed that inspection jurisdiction in air raid protection matters in government-owned plants, as well as in privately-owned plants having important War and Navy contracts, rests respectively in the War and Navy Departments.

"The responsibility of the Office of Civilian Defense in this matter includes the issuance of instructional matter on air raid protection for industrial establishments, the offer of opportunity for Army and Navy plant inspectors to attend Civilian Defense schools, and provisions whereby plants executing Army and Navy contracts receive all desirable assistance from the local authorities in charge of air raid protection in the community in which the plant is situated.

"Protective measures for all plants should be integrated into those of the locality in which each plant is located. However, plants having Army and Navy contracts should receive special treatment in this respect. Before they can receive special treatment, they must be identified as Army and Navy plants by the local authorities.

"For security reasons, the Army and Navy do not feel that it is desirable to send lists of Army and Navy plants to municipalities. A statement by the plant management that the plant is engaged on Army and Navy contracts should serve to identify it. The local authorities in charge of air raid protection should then make available advice, assistance and training facilities upon the request of the plant, but that plant should not be forced to participate in local air raid protection training and exercises unless the plant management so desires."

The Office of Civilian Defense, through its Plant Protection Division, of which Rear Admiral Clark H. Woodward, U.S.N., is director, issued a series of instructional pamphlets on the protection of industrial plants and public buildings. In addition, under sponsorship of the Office of Civilian Defense, there have been established in various universities and colleges, schools for the instruction of plant superintendents, foremen, etc., in the protection of life and property in industrial plants. The first of these was established at the Massachusetts Institute of Technology. Others have been established in various parts of the country.

War Production Board

Division of Industry Operations

Utilities:—Maintenance, Repair and Supplies

As of March 26th, the War Production Board completely revised its preference rating order P-46, issued last September to help utilities in obtaining the minimum amount of material necessary for maintenance, repair and operation. That order assigned a blanket preference rating of A-10 to such materials.

The order issued by W.P.B. supersedes the original order and all amendments thereto and makes several important changes, the principal of which are:

1. The blanket rating of A-10 in the original order is replaced by two higher ratings. An A-2 rating is granted to deliveries of materials for maintenance, repair and operating supplies for power plants and pumping plants, gas plants, manufactured and natural. An A-5 rating is granted for all other facilities, such as lines, pipes and substations. One of the reasons for the distinction is that if a power plant or a pumping station breaks down, the whole system is put out of business. If a power line or a water pipe breaks, only a part of the system is affected. In either case, the rating is high enough to make possible prompt repair.

2. The order also assigns a rating of A-5 to deliveries of materials to bring electricity, gas or water to war plants or other projects bearing a rating of A-5 or better. This does not apply to housing projects. An A-5 rating is also granted to deliveries of materials needed to protect power or water plants against sabotage, such as fencing, tear gas bombs for guards, etc. These ratings may not be applied without prior authorization from the director of industry operations of W.P.B.

3. Line extensions to serve a new consumer are restricted to 250 feet. The original order permitted a 1,000-foot extension. Extensions begun prior to March 26, the date of issuance of this order, may be completed.

(This preference rating order amendment reached us too late to publish it in full in this issue. Complete text of the order may be secured by writing War Production Board, Division of Industry Operations, Washington, D. C., asking for Part 978 which refers to Utilities—Maintenance, Repair and Supplies.)

SUPERIOR GAS METERS

For Sound Values and Continuous Operating Economy

Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs

Write for details and quotations

SUPERIOR METER COMPANY, INC.

167 41st Street Brooklyn, N. Y.

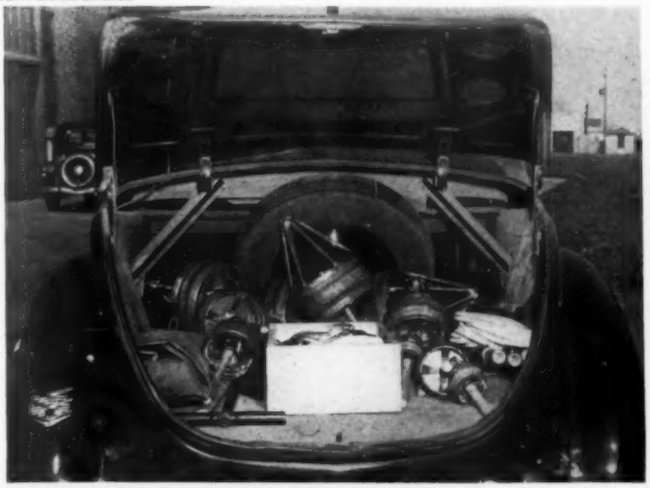
Brooklyn Union Activities For Defense

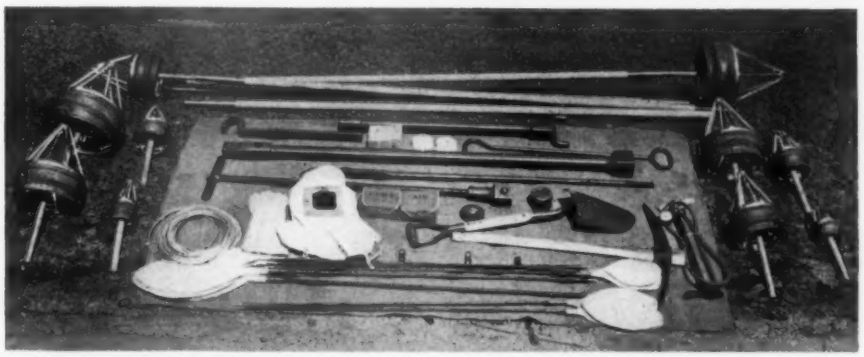
The Brooklyn Union Gas Co., Brooklyn, N. Y., has done a splendid job in building up a defense corps of 700 volunteers, all of whom will be given special instructions for the part each is to take in the corps. The accompanying illustrations show a defense squad car and its equipment.

Above: New Defense Corps Squad Car, equipped with blackout lights, to be used by Defense Corps Primary Squads in responding to emergency calls.

To Right: View of the rear compartment, showing equipment carried for plugging broken mains, closing valves and giving First Aid.

Below: A better close-up view of equipment carried in Defense Corps Squad Cars. Shown are several sizes of conical-shaped plugs, poles for use in forcing them into broken mains, wrenches for closing street valves, canvas-covered rubber bags of varying sizes for use in bagging off mains, a pump for inflating the bags, asbestos helmet and gloves, a pick and shovel, laundry soap and adhesive tape for temporary repairs of small leaks, a measuring tape and First Aid kit.





Priority *in gas purification* earned by
a quarter-century of reliable performance,
tested economy and cooperative service

GPM
IRON HYDROXIDE

GAS PURIFYING MATERIALS COMPANY INC., L. I. CITY, N. Y.

New Type Gas Fired Continuous Conveyor Brazing Furnace

By
William J. Shore
Heating and Industrial Engineer
New York

Among the vast quantity of war and defense material that is now being manufactured, was a metal assembly that required the development of new equipment to permit the use of automatic equipment to increase the rate of output, lower unit labor costs and a uniform quality of workmanship.

The item itself consisted of a piece of welded steel tubing about twelve inches in length, one and one-half inches in diameter and about one sixteenth inch wall thickness.

At one end of this was pressed in a steel plug, headed, which would extend into the tube for a distance of one half inch.

At the junction of the side of the plug and its head, a small groove permitted a ring of solder wire to be inserted before the head was pressed into the tube.

The operation consisted in heating the head to a sufficiently high temperature as to permit the solder to melt and to flow between the sides of the steel plug and the tube and thus to make an air-tight assembly.

This operation could be completed by means of hand operation using gas and would require about four minutes time per operation. At the best one operator could turn out about ten assemblies per hour, or roughly a base labor cost of five cents per unit.

It was immediately apparent that hand labor was out of the question and that the operation had to be done in some other manner.

When the problem was first turned over to the gas utility engineering organization, it was discovered that there was no gas equipment available to handle this type of work.

The only equipment that could be had that would meet this demand for a low cost brazing operation was of the electric induction type.

At a rate of two cents per kw. hour the cost per unit for brazing averaged about 1/10 cent per piece.

The idea of using gas for this operation instead of electricity, meant the development of a new type of furnace that would permit the continuous travel of tubes through the furnace, providing a sufficient amount of heat so as to heat the steel plug from the outside to about 1350° F. since that temperature was necessary to melt the solder and allow of its free flow.

The first type furnace that was developed is shown in Figure 1, in which the tubes travelled through the furnace in an upright position.

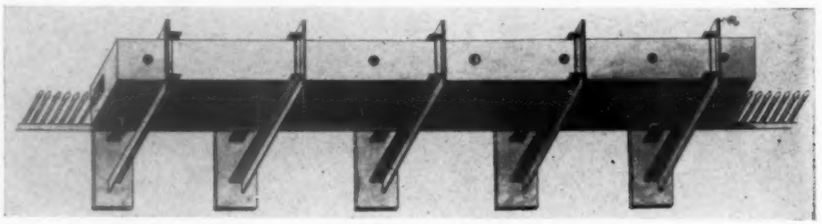


Fig. 1: Vertical Tube Conveyor Belt Brazing Oven.

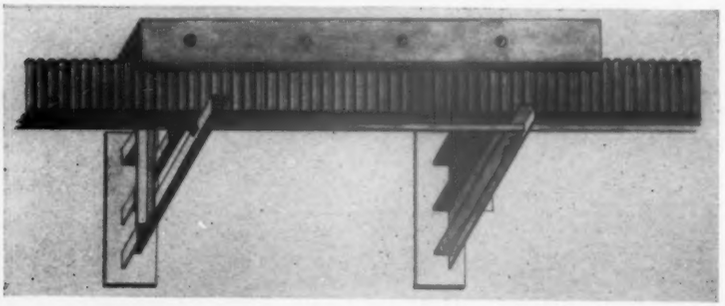


Fig. 2: Horizontal Tube Rolling Brazing Oven.

The second type developed was the one shown in Figure 2, where the tubes are rolled in a horizontal plane.

Both types of equipment turn out the same quality of work, and at the same amount of fuel consumption and in the same length of time. Each of these furnaces turn out 900 assemblies per hour.

The fuel used for supplying the heat is in one instance standard 550 Btu. gas, and, in the other case, propane is used due to the inability of securing service at the location from the local gas utility.

In each instance, the amount of 400 Btus were required to complete the brazing operation per tube. This represents an overall efficiency of about 23%.

The types of gas furnaces shown lend themselves to automatic loading and unloading which incidentally reduce the cost of labor which is required for other types of machine in placing the materials into place and then for removing them.

With the type of furnace shown, the assemblies may be dropped onto the conveyor and also dropped by gravity.

The cost of fuel per unit will naturally vary as the rate for gas varies. At $1.00 per thousand cubic feet, the cost per tube would be 1/10 cents, where the rate is $.50 per thousand feet of gas, the cost per tube would be 1/20 cents. (Based on 550 Btu. Gas).

Compared with a labor cost of 5 cents per assembly it is readily apparent why hand operations are out of the question.

The only additional cost for operations is the cost of electricity. On the horizontal type of equipment a 1/6th horsepower motor is required, on the vertical a two horsepower motor is required. In either event, the cost of electricity per hour for 900 tubes is not greater than 5 cents, or a total cost of gas and electricity between fifty cents and one dollar per 900 assemblies.

No pyrometers are needed in these

furnaces. The regulation of temperature is governed by a hand-operated motor speed changing equipment.

To operate this, the gas equipment is turned on to its maximum output. Then as the tubes ride through the furnace, the speed of the conveyor is varied so as to make the melting point of the solder take place about three or four tubes ahead of the exit of the furnace. If the heat is too great in the furnace, the melting point may take place about middle portion of the furnace, if the speed of the tubes is too great, no melting will take place at all. Therefore by watching the color of the steel plugs, and adjusting the conveyor speed, it is possible at all times to secure the maximum output that may be had by the gas equipment that is in place.

There are, of course, a number of minor difficulties that are encountered whenever a new type of equipment is turned out on the market. They are, at times, a source of difficulty, but patience and a certain amount of ingenuity overcomes each handicap, resulting in a furnace that gives most satisfying results at a minimum amount of initial investment and a minimum amount of operation cost, and a total lack of maintenance expenses.

16th Annual Business Conference The New England Gas Association

WAR and Post-war Operations was the keynote of the 16th Annual Business Conference of The New England Gas Association held at the Hotel Statler, Boston, Mass., on March 19th and 20th, 1942.

A registration of 458 is an indication of the importance attached to this meeting, which was devoted strictly to business, and scheduled no organized entertainment features.

Over a period of years, not only the Annual but even the Sectional Meetings of The New England Gas Association have acquired an enviable reputation. The Annual Meeting this year was certainly among the best, if not the best in the history of the Association, both with respect to the calibre of the papers and to the keen interest taken in them.

With few exceptions all of the discussions dealt with problems arising from the war or from those which probably will arise from war or post-war conditions.

Among the papers presented were the following: "What About Restrictions?" by Watson E. Derwent, President, Association of Gas Appliance and Equipment Manufacturers, (published in this issue of the JOURNAL); "National and Industrial Survival," by E. H. Schell, Head, Department of Business and Engineering Administration, Massachusetts Institute of Technology, (published elsewhere in this issue); "Research for the Gas Industry," Harold Vagtborg, Director, Institute of Gas Technology, Chicago; "New Problems for Your Accountants," E. F. Embree, Auditor, New Haven Gas Light Company; "Gas Company Operation During War," Alfred I. Phillips, Editorial Director, AMERICAN GAS JOURNAL, (published elsewhere in this issue).

The Gas Oil Situation

Because of diversion of a number of tankers to Naval use, and of sinkings of others, a shortage of petroleum products has developed along the Atlantic Seaboard and in the Pacific Northwest.

The cause of the shortage is transportation, not production.

In order to insure a supply of oil to essential industry including the gas industry, the Government has placed in force certain restrictive measures, among which are the following:

(1) Gasoline deliveries to dealers have been limited, and card rationing is in prospect.

(2) Delivery of fuel oil is forbidden for use in any new equipment, including house heating oil burners, unless the installation is completed within 30 days from date of the order; or in any converted facilities unless the conversion is completed within 10 days from date of the order.

(3) Consumers now using fuel oil are forbidden to accept additional supplies unless they are making full use of stand-by facilities using other fuels or power (excepting electricity or natural gas). Suppliers are not allowed to make deliveries of fuel oil to such consumers unless the standby facilities are being used to the fullest possible extent.

(4) Fuel oil burning facilities already installed may be examined by representatives of the Director of Industry Operations, and the suggestion may be made that a less scarce fuel be used. After notice sufficient to permit conversion to such fuel, deliveries of fuel oil to the consumer who fails to convert may be forbidden.

(5) Industrial fuel oil stocks are required to be reduced so that a total of 14 days' supply will be on hand at the time additional deliveries are made.

This latter provision is the one which most directly affects gas companies. Those located in the 17 Atlantic Seaboard states, constituting District No. 1, and also the states of Oregon and Washington, should reduce their oil stocks to a figure of 14 days' supply. This in effect means that each gas company should estimate the date on which its stock will be down to 14 days' use and place an order for a tank car, barge or other usual shipment with its regular supplier for delivery as nearly as may be on the date when its stock will be down to 14 days' use. Under the terms of the order, a supplier may not deliver and a customer may not receive oil unless his stock is down to 14 days' use.

While a 14-day oil stock is small for many gas companies, the measures taken by the Government appear to be necessary, and it is urged that full cooperation be given in carrying them out. The essential place of gas companies in supplying fuel for war industries and the importance of continuity of their service are recognized. If any gas company in District No. 1 fails to get oil or definite assurance of prompt delivery of oil when its stock is actually down to 14 days' use, it is suggested that it promptly contact Mr. L. H. Spiner, Jr., Director of Marketing District No. 1, Office of the Petroleum Coordinator, 1104 Chanin Building, New York.

Every case in which a gas company has had difficulty in getting oil, has been promptly and effectively handled by Mr. Spiner's office.

It is probable that even more drastic restrictions will be ordered within the next few days, but the essential place of the gas industry will undoubtedly continue to be recognized.

News of the Gas Industry

Supreme Court Widens Control Of Utility Rates

The Supreme Court cleared the way in a decision March 17th, for Federal agencies which regulate utility rates to limit them to a "fair return" on only so much of a company's capital as has been "prudently invested," a basis advocated by President Roosevelt. The high tribunal brushed aside a long-standing theory that the cost of reproducing the plant was an essential factor.

The court's opinion, by Chief Justice Harlan F. Stone, declared that rate-making bodies were not bound "to the service of any single formula or combination of formulas" and that the only restriction upon their determination of a "lowest reasonable rate" was that the rate be "not confiscatory in the constitutional sense."

In a separate concurring opinion, Associate Justices Hugo C. Black, William O. Douglas and Frank Murphy went even farther and indicated that even a confiscatory rate could be legal. They argued that "rate making is a species of price-fixing" and that "legislative price-fixing is not prohibited by the due process clause" of the Constitution.

Natural Gas Act

The decision, which held constitutional the 1938 natural gas act, upheld an order of the Federal Power Commission requiring the Natural Gas Pipeline Company of America and the Texoma Natural Gas Company, both of Chicago, to reduce their rates $3,750,000 a year.

The commission based its order on a total rate base of $74,420,424, and the companies asserted that an additional $8,500,000 should have been included in the rate base for "going concern value." The court found that "the total value of the companies' plant, including equipment in excess of immediate needs when beginning business, has been included in the rate base adopted."

If the rate regulation had been imposed upon the companies in 1931 when they started in business, instead of seven years later when the law was passed, they would have been entitled to earn a fair return upon the value of the whole plant, including equipment in excess of immediate needs but installed for the future, the court said.

"But it does not follow," the opinion continued, "that the companies' property would be confiscated by denying to them the privilege of capitalizing the maintenance cost of excess plant capacity, which would allow them to earn a return and amortization allowance upon such costs during the entire life of the business. . . . Regulation does not insure that the business shall produce net revenues."

Associate Justices Black, Douglas and Murphy, viewing rate-making as price-fixing, observed that "price-fixing, like other forms of social legislation, may well diminish the value of the property which is regulated. But that is no obstacle to its validity."

In their separate concurring opinion, the three expressed the view that "this is an appropriate occasion to lay the ghost of Smyth V. Ames, which has haunted utility regulation since 1898." The Justice Department had asked the tribunal to reverse this famous decision, which held that reproduction cost was an essential element in arriving at a fair valuation.

Government officials contended that the reproduction cost varied from day to day, as the price of materials changed, while the amount "prudently invested" could be determined once and for all.

This was the first rate proceeding under the natural gas act to reach the court.

Wadsworth V.P., Hough a Director, Southern Counties Gas Co.

Guy W. Wadsworth, Jr., was elected vice-president in charge of employe relations and Frederick A. Hough, Executive Engineer, was elected a director of Southern Counties Gas Company of California at a meeting of directors following the annual stockholders meeting, the company announced recently. Other officers and directors were reelected.

Guy W. Wadsworth, Jr.

Wadsworth has been identified with the gas industry in southern California since 1921 when he was employed by the company in the field measurement department. He was secretary to the vice president and general manager for about five years, and in 1927 left the company's employ to become assistant financial adviser to the Republic of Haiti under the auspices of the American State Department. He returned to Los Angeles in 1930 to take up personnel work with the company and in the fall of 1936 took over the personnel work of the former Los Angeles Gas & Electric Corporation. In the spring of 1937 he became personnel manager of Southern California Gas Company and last year was elected vice-president in charge of employe relations for that concern. He will retain both positions.

Hough became associated with the Southern Counties Gas Company in 1925 as a chemist and in 1928 was appointed research engineer. He became distribution engineer in 1931, which position he held until December, 1941, when he was named executive engineer of the company.

Wisconsin Utilities Assn.

The annual meeting of the Wisconsin Utilities Association was held at Milwaukee, Wis., on March 16-17.

At the Tuesday morning session of the convention of the Gas Section, Albert Smith, District Manager, Northern States Power Co., Chippewa Falls, was elected chairman of the Commercial Division, and E. C. Hemes, Milwaukee Gas Light Co., was elected chairman of the Technical Division. Carl A. Altenbern, General Manager, Wisconsin Southern Gas Co., Burlington, was elected vice chairman of the Technical Division, and B. T. Franck, vice president, Milwaukee Gas Light Co., was elected vice chairman of the Commercial Division.

A. G. A. National Advertising

Two new advertisements developed by the Association's Committee on National Advertising and scheduled for publication in May and June issues of consumer magazines of large circulation have the unique distinction of bearing the official insignia and approval of the Office of Defense Health and Welfare Services, Paul V. McNutt, Director.

Following the approval of the new advertising by the Government, Mr. McNutt wrote Major T. J. Strickler, Chairman of the Committee on National Advertising that "both our Nutrition Department and our Information Service tell me that this is a very effective presentation," and he added, "this is entirely in line with the fine cooperation which the American Gas Association has been giving in this field."

The Committee on National Advertising has not announced any plans for the seventh year of national advertising, covering the term July 1, 1942—June 30, 1943. These will be developed and discussed by the Committee at a meeting to be held in New Orleans at the time of the Natural Gas Convention and Executive Conference.

Final Arrangements are Made for the Eighteenth Annual Southwestern Gas Measurement Short Course

The Eighteenth Southwestern Gas Measurement Short Course will be held at the University of Oklahoma, Norman, Oklahoma, on April 21, 22 and 23, 1942. These dates were decided definitely by the General Committee while it was in session in Tulsa, March 7. The March meeting was called by Mr. Max K. Watson, Chairman of the Program Committee, to consider the final draft of the program.

During the Short Course a general meeting will be held each morning and topics of interest to all will be discussed. The afternoons have been set aside for classes covering a wide variety of subjects but all relating, directly or indirectly, to gas measurement.

Among the prominent men who will speak before the General Assembly are Burt R. Bay, President, Northern Natural Gas Company and Judge Reford Bond, Chairman of the Corporation Commission of Oklahoma. The morning of April 23 has been set aside for the discussion of the fundamental principles involved in all phases of gas metering and regulating practices. In selecting subjects for the forty-eight afternoon classes, the Committee has been ever cognizant of the problems facing the gas industry due to the war. Many fundamental subjects will be offered for the benefit of the hundreds of men who have been employed in gas measurement work in recent months. There will also be advanced classes for the more experienced men. The Instructors are well qualified to teach their subjects and each will allow ample time after the presentation of material for discussion which always adds to the richness of the program. C. E. Terrell, Chairman of the Exhibits Committee, announced that nineteen companies will have educational exhibits on display throughout the short course.

Chairmen of other Committees besides Mr. Watson and Mr. Terrell are: G. W. McCullough, Phillips Petroleum Company, Bartlesville, Oklahoma, General Chairman; Local Arrangements and Banquet, Dean W. H. Carson, College of Engineering, University of Oklahoma; Registration and Publicity, Miss Kate A. Niblack, Secretary, Oklahoma Utilities Association, Oklahoma City; Practical Methods, E. C. McAninch, Oklahoma Natural Gas Company; Publication, Earl Kightlinger, Arkansas Louisiana Gas Company, Shreveport, La.

GENERAL COMMITTEE IN SESSION AT TULSA

Left to right seated—E. L. Stark, Earl Kightlinger, J. H. Page, Max K. Watson, G. W. McCullough, W. H. Carson, Kate A. Niblack, E. C. McAninch, R. M. Scofield.

Left to right standing—R. L. Rountree, J. L. Griffin, W. R. McLaughlin, W. F. Lowe, L. G. Rheinberger.

Refractory Insulating Concrete. Properties of this product of the Atlas Lumnite Cement Co., Chrysler Bldg., New York, are described in a recent bulletin which stresses the availability of materials and the adaptability of Refractory Insulating Concrete for industrial furnace construction. Six legible charts give hot- and cold-face temperatures and heat loss for different thicknesses of several types of furnace walls at operating temperatures from 250°F. to 2500°F.

CONVENTION CALENDAR

April

13–15 *Mid-West Gas Association,* Sioux City, Ia.

14–15 *Missouri Assn. of Public Utilities,* St. Louis, Hotel Jefferson.

19–21 *Gas Meters Association of Florida-Georgia,* Savannah, Ga.

21–23 *Southwestern Gas Measurement Short Course,* Norman, Okla.

24 *Maryland Utilities Assn.* Spring Meeting, Lord Baltimore Hotel, Baltimore, Md.

May

4– 7 *Natural Gas Section American Gas Association,* Annual Convention, Roosevelt Hotel, New Orleans, La.

5– 7 *A.G.A. Distribution Conference,* New Orleans, La.

11–12 *Indiana Gas Association,* Annual Meeting, Indianapolis.

25–27 *A.G.A. Production and Chemical Conference,* New York City.

June

4– 5 *Canadian Gas Association,* 35th Annual Meeting, Windsor Hotel, Montreal.

September

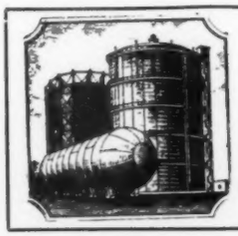
28 *Pacific Coast Gas Association,* San Francisco.

29th to Oct. 1 *American Gas Association,* Annual Meeting, San Francisco.

Midwest Industrial Gas Council Elects 1942 Officers

James E. Dare, Public Service Company of Northern Illinois, Streator, was elected 1942 chairman of the Midwest Industrial Gas Sales Council of the A. G. A. Industrial and Commercial Gas Section at a recent meeting of the Council in Chicago. He was nominated to succeed George L. Ballard, outgoing 1941 chairman.

Chosen as Mr. Dare's co-workers on the Council were R. H. Lind, Iowa-Illinois Gas & Electric Co., Davenport, Iowa, *Vice Chairman,* and Paul F. Gibson, Western United Gas & Electric Co., Aurora, Illinois, *Secretary and Treasurer.*



STACEY BROTHERS
Gas Construction Co., Inc.
"STACEY-KLONNE" & TELESCOPIC GAS HOLDERS "STACEY BULLET" PRESSURE HOLDERS
PURIFIERS AND STEEL PLATE CONSTRUCTION
Executive Offices: Cincinnati, Ohio
Eastern Office: 21 West St., N. Y. C.

L. J. Eck Named Vice Pres. Minneapolis Gas Light Co.

Lester J. Eck, general superintendent of The Minneapolis Gas Light Company, was named vice president and general superintendent, at the annual meeting of

Lester J. Eck

The Company's board of directors. Announcement of the appointment was made by Harry K. Wrench, president of The Company.

Mr. Eck has been a member of The Company's engineering staff since 1924.

West Virginia Meter School Postpones Meeting

A meeting of the General Committee of the Appalachian Gas Measurement Short Course was held at West Virginia University on February 17, 1942, presided over by Chairman J. E. Overbeck of the Columbia Engineering Corporation, Columbus, Ohio. The subject of the 1942 School was discussed by the representatives of the various utilities and manufacturing companies present. It was quite generally agreed that the pressure of war materials business, personnel shortages and other factors would tend to limit general participation in a school this year.

On motion, the committee voted as follows.

1. "That the committee defer action on the selection of a date for a school for this year, pending future developments which may or may not make a school in 1942 feasible."

2. "That a future committee meeting may be held at the call of the chairman in the event that developments warrant such a meeting or indicate the opportunity or necessity of a school during the year 1942."

3. "That the General Committee organization be held intact until after the next school is conducted and that operating committees for the next school be appointed."

The following have been appointed to sub-commiteee chairmanships for the next meeting of the school:

Program Committee, Joseph M. Low, Chairman, Hope Natural Gas Company, Clarksburg, W. Va.; Banquet and Entertainment Committee, A. D. MacLean, Chairman, Pittsburgh Equitable Meter Company, Pittsburgh, Pa.; Housing and Registration Committee, W. A. Staab, Chairman, West Virginia University, Morgantown, W. Va.; Exhibits Committee, J. M. Allison, Chairman, Monongahela West Penn Public Service Company, Morgantown, W. Va.; Publicity Committee, R. S. Reed, Jr., Chairman, Pittsburgh Equitable Meter Company, Pittsburgh, Pa.; Educational Committee, H. J. Wagner, Chairman, West Virginia Public Service Commission, Charleston, W. Va.; Publications and Merit Awards Committee, G. R. Spindler, Chairman, West Virginia University, Morgantown, W. Va.; Practical Methods Committee, Report No. 3, C. B. Heist, Chairman, Manufacturers Light and Heat Company, Pittsburgh, Pa.; General Committee, J. E. Overbeck, Chairman, Columbia Engineering Corporation, Columbus, Ohio; Executive Committee, G. R. Spindler, Chairman, West Virginia University, Morgantown, W. Va.

Reliance Regulator Company Announces Promotions

At a recent meeting of the Board of Directors of Reliance Regulator Corporation of Alhambra, Calif., Mr. K. C. Tomlinson was elected Vice President.

Mr. J. J. Delaney was appointed Manager of the Company's operations, retaining also his present position as Sales Manager.

K. C. Tomlinson J. J. Delaney

Both Mr. Tomlinson and Mr. Delaney are currently Directors of Reliance Regulator Corporation, which is a subsidiary of American Meter Company. Mr. K. C. Tomlinson will continue as Manager of American Meter Company for the Pacific Coast area, with headquarters in San Francisco.

These promotions were made to fill vacancies in the offices of Vice President and Manager of the Reliance Company caused by the death of Mr. A. C. Thompson on January 5, 1942.

From "Way Down Under"
come the highest grade of selected lambskins.

New Zealand Skins **are noted for their small pores and fine texture. Those we treat conform to definite standards of thickness and absence of holes, scratches or blemishes.**

These we use in the manufacture of

"COLONIAL BRAND"

RECHROME METER LEATHER

a product which has been recognized with universal acceptance by the Gas Industry for over 50 years.

Our leathers stand up in the meter under all variable conditions. They are strong, pliable and unaffected by heat, cold or dampness.

Superior to any substitute offered for this purpose.

We also manufacture Oiled Meter Leather for Iron and Tin Case Meters, Governors and Regulators.

Besse, Osborn & Odell, Inc.
129 SOUTH ST., BOSTON, MASS.

Sales Representatives
Bankart & Samuelson
177 WILLIAM ST., NEW YORK
Wilder & Co.
1038 CROSBY ST., CHICAGO

Natural Gas Convention and Distribution Conference

For the second time in the history of the two groups, the Natural Gas Convention and the Distribution Conference of the American Gas Association will meet jointly May 4-7 in New Orleans, Louisiana. Headquarters for the 37th Annual Natural Gas Convention will be the Roosevelt Hotel and for the 19th Annual Distribution Conference, the St. Charles Hotel. The last time these two meetings were held simultaneously was in 1939 at Tulsa, Oklahoma.

Natural gas conferences and distribution meetings will be held independently with the exception of the joint General Session on Tuesday morning, May 5.

Delegates to the Natural Gas Convention will meet in a second general session on Wednesday morning, May 6, at which time a diversified program will be presented including such subjects as "Marketing Problems Under War Conditions," "Public Relations Yesterday, Today and Tomorrow" and "Vocational Training in the Natural Gas Industries."

The Gas Industry Dinner for which reservation blanks will be mailed at an early date, will be held on Wednesday night, May 6, and will be a prominent feature of the four-day meeting. In addition to the address of a well known governmental official, George S. Hawley, president, American Gas Association, and also president, The Bridgeport Gas Light Company, will speak.

Production Conferences

Both Monday morning and Monday afternoon sessions feature a panel discussion which will include speakers from Oklahoma, Louisiana, Ohio, Texas, California and Pennsylvania. The discussion on Monday morning will have to do with "Drilling and Completion in High Pressure Areas." On Monday afternoon the subject will be "Proper Production Methods." Each part of the symposium will last only 12 minutes in order that ample time may be allowed for full discussion.

Transmission Conferences

Among the subjects to be discussed during the Transmission Conferences on Monday morning, Monday afternoon and Tuesday afternoon are:

Cathodic Protection, Vibration Elimination in Gas Engine Driven Compressors, Headers and Piping, Main Line Automatic Shut Off Valves, New Acetylene Welding Process.

Pictures and Discussion of Construction of Lirette-Mobile Line, Practical Problems in Dehydration Plants Design and Operation, Panel Discussion on Dust Removal, Aerial Patrols, Cost and Effectiveness.

Recycling as a Conservation Measure, Prevention of Sabotage, Hydrate Storage.

Industrial and Commercial Gas Conferences

The entire Industrial and Commercial Gas program will concern industrial gas at work manufacturing war materials and helping to prepare food in quantity and rendering other necessary services for the military forces, workers in military factories and civilian groups. This program will show how industrial gas engineers are working shoulder to shoulder with regular factory workers in producing war materials.

Residential Gas Conferences

"Today's Sales Developments," a panel discussion, will be an outstanding part of the Residential Gas Sales Conference on Wednesday afternoon, May 6. Participating in this part of the program will be leading executives of the natural gas industry.

There will also be addresses on "Maintaining Customer Satisfaction During the Emergency," "The Outlook for Gas Appliances," and others.

A.G.A. Distribution Conference to Tackle Pressing War Problems

Able distribution engineers from all parts of the country are expected to take part in the annual Distribution Conference of the Technical Section, American Gas Association which will be held concurrently with the Natural Gas Convention at the St. Charles Hotel in New Orleans, May 4-7. New problems arising from the tremendous loads placed on gas distribution systems supplying war industries as well as problems related to material shortages, property protection and personnel training, make this a most important conference. The program committee under the leadership of C. S. Goldsmith, chairman of the Distribution Committee, has prepared a flexible program to allow for full discussion of these new conditions.

There will also be conferences on Accounting and Accident Prevention.

Decrease in Gas Rates for New Orleans

Both commercial and domestic gas service rates in New Orleans, Louisiana, were lowered substantially beginning March 20, as the result of compromise action by New Orleans Public Service, Inc., with the New Orleans City Commission.

The rate reduction followed several months of study on the part of both the utility and the commission, which had originally through its council adopted an ordinance reducing allowable return on the base rate investment of New Orleans Public Service, Inc., from 7½% to 6%, and lowering the gas rate to domestic and small commercial users from 90 cents a thousand feet plus a meter charge of 25 cents to 54 cents a thousand without a meter charge. This ordinance was held up pending study by the utility and the commission council until February, when the compromise plan was accepted by both.

The new rate is, for domestic consumers, 90 cents for the first 1000 feet, 70 cents for the next 5300 feet per thousand, and 60 cents for the next 14,000 cubic feet above the first 6000 feet, and 50 cents a thousand for all gas over an initial consumption of 20,000 feet. The meter charge is eliminated.

For small commercial users, the rate is 90 cents for the first seven hundred cubic feet, 70 cents per thousand for the next 49,300 cubic feet, 60 cents for the second 50,000 cubic feet and 55 cents for all gas above 100,000 cubic feet. The meter charge is likewise eliminated.

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue. Brooklyn. New York

GOLDEN BROWN MASTERFRYER

COMPLETE COMMERCIAL LINE OF DEEP FAT FRYERS

• LONG • LIFE • POTS •

• HIGHER • EFFICIENCY

FOR RESTAURANTS, HOTELS, INSTITUTIONS AND BAKERIES

A CREDIT TO THE GAS INDUSTRY

MANUFACTURED BY

GOLDEN BROWN APPLIANCE MFG. CO.

LYNN MASS.

PROMPT DELIVERIES

New Jersey Gas Association Home Service Committee Holds One-Day Conference

The Home Service Committee of the New Jersey Gas Assn. held a one day meeting at Asbury Park, N. J., Feb. 17. The papers presented covered the many ways the Home Service Dept. of utility companies are being of service to the housewives in their communities by helping them select and prepare the most complete meals from the point of diet. As Miss Edith Hopkins, Jersey Central Power & Light Co. expressed it, "Home Service is the first aid squad for the ailing family diet."

Miss Fay L. Muzzy, Home Service Consultant of the Public Service Electric and Gas Co. in a paper titled "How Home Service can Cooperate with the Defense Council" said: "In many towns The Consumer Interest Committee is setting up Information Bureaus in different sections where people may stop in to obtain information on foods, food budgets, conservation, disaster shelves, nutrition and substitute foods. In other communities these are discussed by lecturers and in newspaper columns, However, the women who have volunteered for these services are not all Home Economists, and they need material to distribute and references. We can be helpful by supplying this.

"Up to this time I have supplied our local Committee with the following:

1. A list for a disaster shelf for feeding a family for two days if the fuel and water supply were not available.

2. A general marketing list for a balanced daily diet.

3. Information on how to store and cook foods to preserve vitamins and minerals.

4. Low-temperature roasting charts were supplied, also low-cost oven and skillet meals.

5. Our Home Economics News has had two pages added with information about the care and preservation of gas and electric equipment. This information is used by lecturers and in newspaper columns and is given out at the Information Bureaus.

6. A table of substitutes for sugar was supplied.

7. Suggestions for seasoning with herbs which can be grown in window boxes were made, with the probable scarcity of spices in mind.

8. A lecture was written to be used by the Council and myself which includes all the topics above and additional information about conservation and hoarding."

Miss Catherine Cahalan, Acting Chairman of the Home Service Committee presided.

Maintaining Sales Force

An unprecedented use of advertising space for the purpose of maintaining the employment of its national sales force has been planned by Caloric Gas Stove Works, of Philadelphia. Copy has been prepared in which the company will offer the part-time services of its salesmen to manufacturers of products unaffected by priorities.

Caloric now has a force of thirty-two trained salesmen, located in strategic centers throughout the country. These men have developed sales contacts with more than five-thousand buyers representing department stores, furniture stores, appliance dealers and other retail outlets.

The existence of this sales force is seriously threatened, because the production of gas ranges is drastically curtailed by priorities and the company has been forced to adjust its manufacture to meet this necessity. It is believed that this is the first instance of a major company using its normal advertising space in an effort to save the jobs of a number of its employees.

Gas Helps Eating Establishment Meet Health Code

Military authorities at Fort Custer, Battle Creek, Michigan—re-emphasizing President Roosevelt's assertion that "the health problems of the military and civilian population are inseparable"—have taken stringent measures to protect the health of soldiers stationed there. It is reported that public eating and drinking places that comply strictly with the army and local health code are allowed to display the "Army Permit" placards while those not satisfactorily meeting such codes are declared "out-of-bounds."

Gas is playing a prominent part in helping to meet the exacting sanitation and dishwashing requirements—as well as for cooking and baking—in many of the restaurants proudly displaying Fort Custer's army approval symbol. This reads, "Approved for Patronage by Fort Custer Personnel." Rigid inspections were conducted by army officials in copoeration with local health authorities of all restaurants in Battle Creek and within a fifty-mile radius. To obtain the coveted army placard, restaurants have to comply with the following:

> A two-minute immersion of eating and drinking utensils in 170 degree hot water, a half minute in boiling water or two minutes in approved chlorine rinses; or kept in a steam cabinet 15 minutes at 170 degrees, five minutes at 200 degrees or in a hot air cabinet for 20 minutes at 180 degrees.

One factor in the improvement of sanitary conditions in the Fort Custer area, has been a new understanding of what sanitation implies. Insufficient hot water or inadequate dishwashing facilities—noted as the principal reason for turndown—is being remedied in many restaurants by the use of improved gas water heaters. John B. Kelly, Assistant Director of Civilian Defense in Charge of Physical Fitness, says, "Hot water is indispensable to the health and physical well-being of the nation and it seems to me that there is no greater precaution we can take against plague and epidemics than cleanliness." The highly satisfactory experience of gas at Battle Creek indicates its further use as the army extends its sanitation drive.

New Laboratories Research on Gas Immersion Heaters Under Way

Recognizing the need for basic data on immersion tube heating for commercial and industrial uses, the Committee on Industrial Gas Research ot which Mr. J. W. Batten, Vice-President and General Manager of the Michigan Consolidated Gas Company, Detroit, is Chairman, has initiated a fundamental research project for this purpose. In view of their outstanding facilities for such studies this assignment has been made to the American Gas Association Testing Laboratories. Designated as project No. 47 "Research in Gas Immersion Heater Design and Operation," laboratory work was started late in January. To date progress has been made on review and abstract of literature and manufacturers' data, and test equipment is being assembled.

It is planned to divide the experimental work into three parts, using atmospheric, forced draft, and induced draft immersion burners. In all instances examination and testing of these representative types will precede recording of data and determination of effect of changes in important design variables on their performance. Such tests will include combustion, burner and pilot operating characteristics on manufactured and natural gases, study of factors affecting efficiency and heat transfer per unit area, length and diameter of tube, and noise of operation.

Advertising Policies in a War Economy

Speaking in an off-the-record manner because he "hadn't heard from Washington since he left this morning," John H. Morse, Director of Commercial and Economic Information for the Bureau of Foreign and Domestic Commerce, made a brutally frank address to the Eastern Industrial Advertisers on Thursday evening, March 5, on the subject of advertising policies in a war economy. Stating that this is no time to worry about competitive advantages, Mr. Morse advocated more "damn the torpedoes" in industrial advertising—free blue-penciling of defense angles in favor of a "let's attack" attitude. "Security? Nuts! Who the hell wants to be an angleworm down so deep nobody can get to him?" was Mr. Morse's keynote.

"Industrial advertising can definitely contribute to the war effort," Mr. Morse explained, "by helping production men make better use of fighting-tools pointing out labor-, time-, and maintenance-saving short-cuts." He recommended the inclusion of women in industrial training plans.

"We won the last war," Mr. Morse explained in a brief discussion of the post-war problem, "but lost the peace because we did too good a job of getting people to *want* things and too poor a job of letting them *get* these things."

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"WAR PROTECTION OF THE GAS INDUSTRY"

"War Protection of the Gas Industry," the most recent publication of the American Gas Association, is a basic study intended to provide a comprehensive source of information to gas companies on the protection of their properties and personnel and the repair of damage caused by air raids and other attacks. The material is printed in looseleaf form, 8½ x 11, conveniently indexed so that additional pages can easily be added when they are released. The information now available is included on 100 pages and contains specific suggestions for operating procedures, including details of English and European experience.

All this material was prepared by Mr. C. G. Segeler of the American Gas Association staff, and edited by a special committee of the Technical Section.

Copies are available at $2.50 to members of the Association and $5.00 to non-members. This price is in the nature of a subscription, and covers material which may subsequently be issued.

FOR WARM AIR FURNACES AND ROUND BOILERS

COLUMBIA CONVERSION GAS BURNERS

MODEL P-ZE

Tamper-proof controls, quiet operation, high efficiency, easy installation, positive performance and negligible service requirements—these are the features that have made Columbia NU-TIPE Ductless Gas Burners so popular with scores of Utilities and thousands of home owners all over the country. Performs perfectly with natural, manufactured or mixed gases. *Write for literature.*

COLUMBIA BURNER CO., Dept. A, Toledo, Ohio

ALFRED I. PHILLIPS

CONSULTING ENGINEER

Rate Developments Valuations

Reports Design

Management

53 PARK PLACE NEW YORK

New England Gas Industry And the War

(Continued from page 9)

been, by the generous giving of time and thought by so many of our industry members. Without their work, our Association could not have built its present enviable position in our industry. There is, however, a contributing reason for the Association's splendid position and I believe it is due, in a large measure, to the helpful planning and guidance given by Clark Belden, the Association secretary, and his assistants. In them, we have the embodiment of that old saying, "Just what the doctor ordered," and I would be very remiss in my duty not to extend a note of appreciation to them, as well as to all of the others who have contributed so much.

By nature, I am an optimist, but if what I have said today seems to belie that impression and appears pessimistic, it is only that I am impressed with the seriousness of this war situation. There is a job to be done, a gigantic task for all of us who believe in *our* way of living. It is a challenging job—and let's get it over as quickly as possible. Wishful thinking will not accomplish this, but hard work *will*. And may our Association, our industry and each individual in it put not one but *both* shoulders to the wheel!

Presented before the New England Gas Association, Boston, Mass., March 19, 1942.

Educational Slide Film

(Continued from page 24)

for showing the production to employes, while another is retained in the advertising department for use in displaying the film to "outside" groups. These will consist of heating and appliance dealers, public improvement associations, civic associations, etc. Appreciation of gas and the efforts of the company are expected to follow.

Use of the film, according to Mr. Paterson, will enable the company to educate thoroughly employes of the electrical and transportation departments to how the gas departments operate, and give them a practical understanding of the system from start to finish—whereas in the past electrical and transportation employes quizzed by the public as to points about gas service had to admit they did not know. A certain amount of "merchandising" of company goodwill is naturally involved. Summed up, however, the slide film in combination with employe conference groups and the use of educational booklets are making New Orleans Public Service Company, Inc., employes confident, well-informed boosters for the utility.

National and Industrial Survival

(Continued from page 27)

high place for them in industry have passed tests which have permitted only the best to attain. Presidents are, by nature of the competitive process through which they have passed—able men, more able than could be provided by any other method of appointment to high office.

There are two opportunities here that may be mentioned. It is an arresting fact that in time of war, relationships within the boundaries of any uninvaded country should be more peaceful than at any other time. That is to say, the belief in, and practise of the arts of peace should be more conscientiously adhered to, than when the fighting is over. We must discipline ourselves in ways of human relationships as never before, if we are to do our patriotic best.

Kettering has said, "When you get into business, you get into trouble, and the best part of it is that you can pick the kind of trouble that you like to get into." In wartime however, administrators can only pick the kind of solution to the trouble in which they enforcedly find themselves. But this isn't as bad as it sounds. There are great opportunities for initiative, for enterprise, for imagination, for courage and determination, in getting out of trouble—in aggressive response to difficulty.

When a herd of elk scent the presence of a bear, it is said that they form in a great circle; the youngest in the center, the yearlings and females in the middle, the males around the fringe, their horns forming the outer barrier. When the bear appears, the circle opens slightly, and the leader steps clear and goes forward to do battle.

Angle Engine - Compressor. Bulletin B-19 of Worthington Pump & Machinery Corporation, Harrison, N. J., describes these units with many illustrations of installations. Construction characteristics are featured in considerable detail. These units are used for refineries, gas transmission lines, gas or air lift pumping, gasoline plants, repressuring, refrigeration, etc. Copy on request.

EDW. T. FISHWICK

Edward T. Fishwick, vice-president and director of the Worthington Pump and Machinery Corporation died on March 15 at his home in Glen Ridge, New Jersey.

Mr. Fishwick had been with the Worthington organization for 49 years having

E. T. Fishwick

started with the corporation at its Cincinnati Works. Mr. Fishwick was senior vice-president of the corporation. He was also president and director of the Worthington-Gamon Meter Company of Newark, New Jersey, a director of the Glen Ridge Trust Company; a director of the New Jersey State Chamber of Commerce and was formerly head of the Diesel Engine Manufacturers Association.

MARION PENN

Marion Penn, general manager of the electric department of the Public Service Electric and Gas Company, Newark, N. J., died March 29th at his home in South Orange, N. J., of a cerebral hemorrhage. He was fifty-one years old.

Mr. Penn was a director of the electric and gas company and of the Public Service Co-ordinated Transport and Interstate Transportation companies. He had been in the electric utility field since his graduation from Purdue University in 1911 with a degree in electrical engineering.

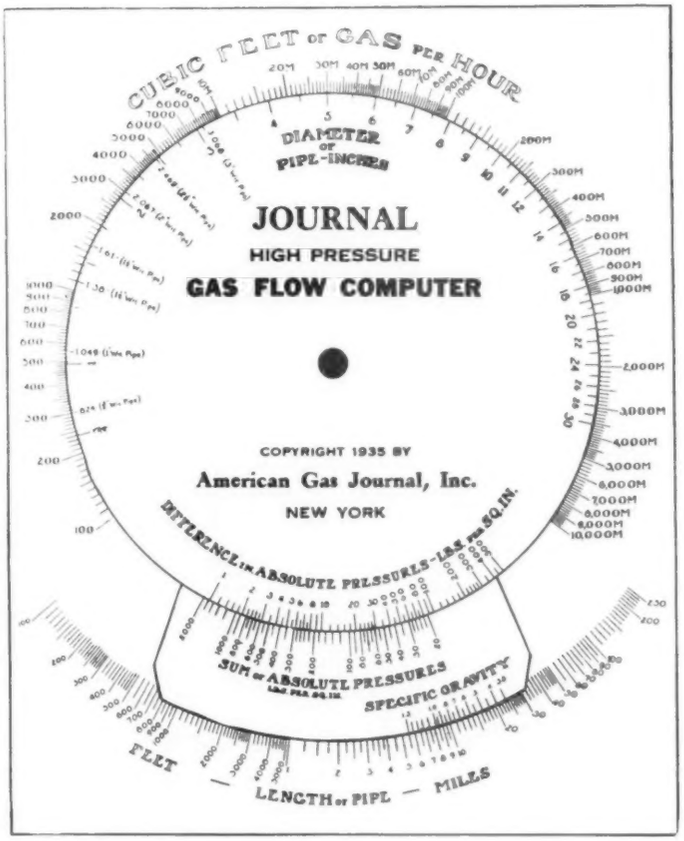
DAVID M. CRAIG

David M. Craig, for many years an official of Koppers Company, Pittsburgh, Pa., died suddenly in his office March 26th. He was 67 years old.

Born in Washington, D. C., the son of the late Lieut. Col. Robert Craig and Annie B. M. Craig, he was graduated by Princeton University in civil engineering with the class of 1897. He joined the Koppers organization as engineer in the Construction Department in 1915 and in recent years has been in charge of personnel and insurance.

HUGHES PRINTING CO.
EAST STROUDSBURG, PA.

"Journal" Gas Flow Computers



New Improved Gas Flow Computers now available of durable celluloid, encased in a convenient leatherette cover with complete instructions.

Actual Size 6¼ x 7½

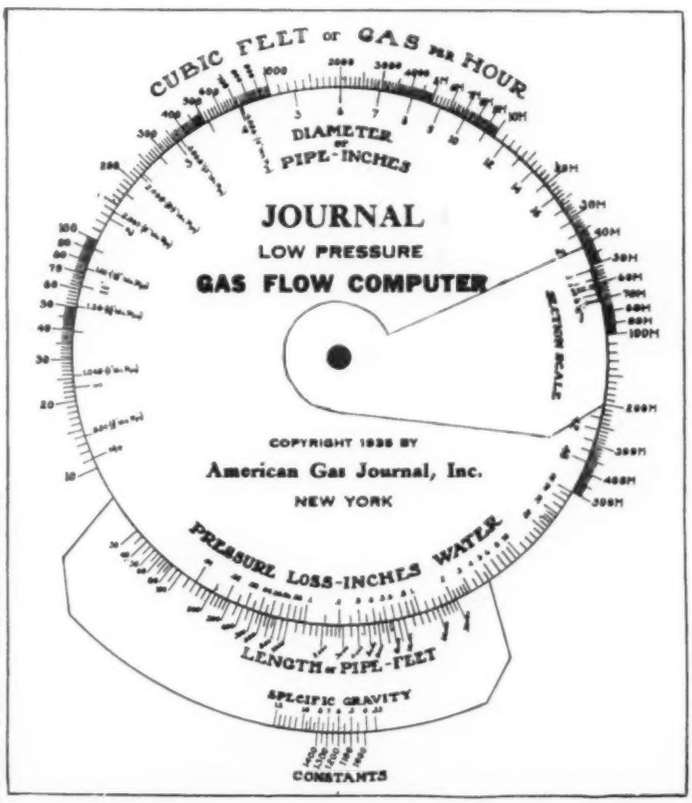
High Pressure Computer Range:

Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in. 1-500
Sum of Absolute Pressures—Lbs. per sq. in 2000-20
Specific Gravity 1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure Computer Range:

Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter ¾" to 48" (including standard and actual weight up to 4")
Pressure Loss Inches .01-10.
Length of Pipe—Feet 30-30,000
Specific Gravity 1.5-.35
Constants 1400-1000

Price $3.50 Each, Postage Prepaid



AMERICAN GAS JOURNAL
53 Park Place, New York

Please enter our order for Computers as follows at $3.50 each, postage prepaid

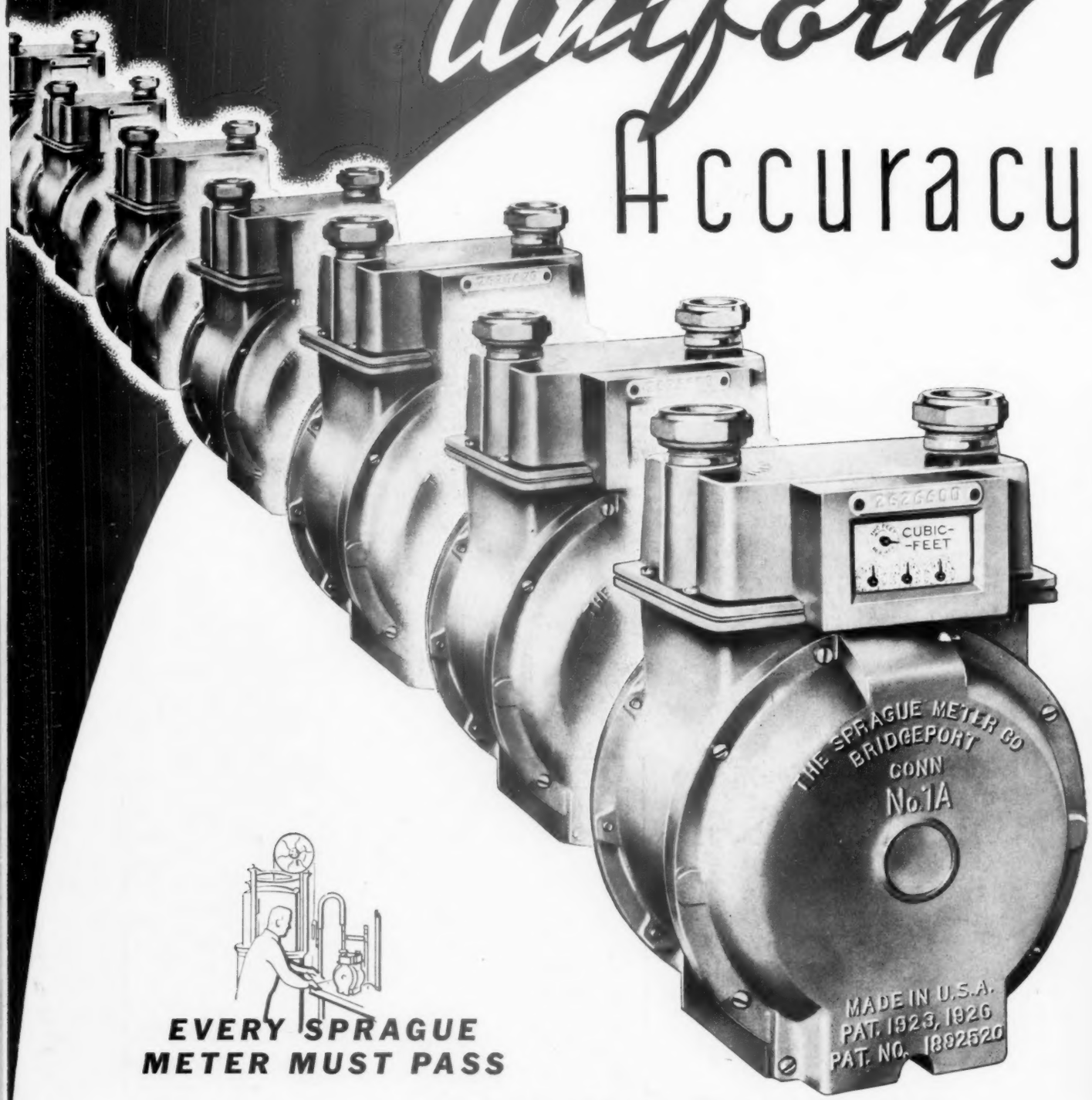
....HIGH Pressure Computer

....LOW Pressure Computer

NAME .....

ADDRESS .....

Uniform Accuracy..



EVERY SPRAGUE METER MUST PASS

Every Sprague Meter must not only pass the most rigid tests before leaving the factory—but raw materials, from which they are made, are subjected to critical Laboratory tests. Each component part is carefully inspected to assure interchangeability. Uniform accuracy is the result and low maintenance costs are certain.

SPRAGUE METER COMPANY

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